

AN529

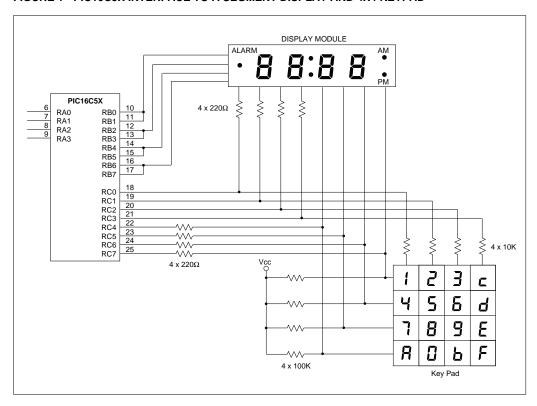
Multiplexing LED Drive and a 4x4 Keypad Sampling

INTRODUCTION

Many applications require driving LEDs along with an interface to a keypad. Implementing such designs usually involves using up significant amounts of the processors I/O lines. This application note describes a method which uses only 16 I/O pins of a PIC16C5X microcontroller to sample a 4x4 keypad matrix, and directly drive four 7 segment LEDs (see Figure 1). Direct drive of the LEDs is possible, because of the high sink and source capabilities of the PIC16C5X microcontroller, thus eliminating the use of external drive transistor, and resulting in reduced cost and complexity of the overall circuit.

Typically applications having LEDs and keypads also keep track of real time, in order to synchronize certain key events. An Industrial Clock/Timer example has been used in this application note as a demonstration of this technique. The software overhead to keep track of real time is minimal and the user can modify the code to significantly expand the functionality of this circuit.

FIGURE 1 - PIC16C5X INTERFACE TO A SEGMENT DISPLAY AND 4X4 KEYPAD



PART A: 4X4 KEY MATRIX SAMPLING

Implementation

The 4x4 Key Matrix is connected to port C of the PIC16C5X (Figure 2a). The four columns are connected to RC0-RC3 and the four rows are connected to RC4-RC7. Each digit is refreshed every 20 ms. with a 5 ms pulse. The keypad is sampled every 20 ms with four 3 µs pulses (Figure 3).

The keypad sampling is as follows:

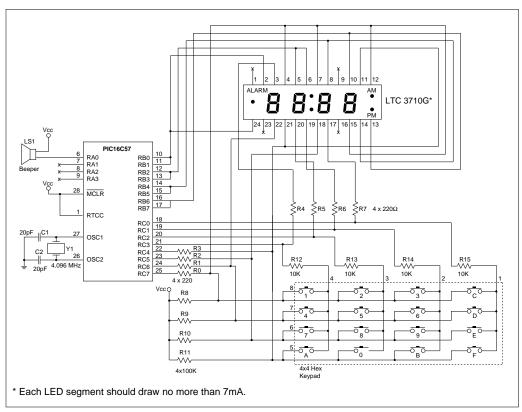
- The columns are connected to output pins, and the rows are connected to input pins.
- 2. Each column is sequentially driven to a low voltage while at the same instance the four rows are sampled. Since the rows are all held high with pull-up resistors, all four inputs will normally be high. If a key is pressed in a column which is at a low level, that low level will be conducted to the input pin through the closed key and the corresponding row will be sensed as a low.

- Before a new column is brought low, care should be taken to discharge the input pins (see code section for details).
- A 50 ms key debounce technique has been implemented in the software, in order to eliminate multiple key strokes.

Notes:

- Resistors R8-R11 and R12-R14 have been selected such that their ratio is 1:10. This will insure a 0.5 Volt level at the input, when a key is pressed. Also R8-R14 should have a value such that their current contribution to the LEDs segments is negligible.
- In circuits where there is substantial interference between the key matrix and the LED drive circuit, the alternative circuit (Figure 2b) should be utilized. Diodes in the path of all pins connected to the keypad insure that there is minimal interference from the keypad, when it is not being sampled.

FIGURE 2A - PIC16C5X INDUSTRIAL CLOCK/TIMER SCHEMATIC



PART B: INDUSTRIAL CLOCK/TIMER

Clock Selection

The 4.096 MHz crystal oscillator is the time base. The PIC16C5X internally divides the clock by 4 to give an internal clock of 1.024 MHz. This clock is further divided by 32 (by the prescaler in the OPTIONS register) to give a clock of 32 KHz which is used to increment the RTCC in the PIC16C5X. If the RTCC is initialized to 96, it would overflow to 0 in 5 ms.

 $(256-96) \times (1/32000) = 5.000 \text{ ms}$

This 5 ms is used to count the seconds, minutes and hours in the clock/timer. It is also used as a time base to update the display digits and sample the keyboard. The clock speed being 4.096 MHz, each instruction will

execute in 1 μ s. Therefore in 5 ms, approximately 5000 instructions can be executed. This gives sufficient time to execute a large section of code and not miss the overflow in the RTCC.

Using a 3.579545 MHz color burst crystal oscillator as a time base

Some users may want to use a color burst crystal oscillator as a time base, because of its low cost. If a $3.579545\,\text{MHz}$ crystal is used, then the internal clock will be $1.117\,\mu\text{s}$. If this is prescaled by 32, the RTCC will be incremented every $35.758\,\mu\text{s}$. Initializing the RTCC with 116 will cause it to overflow to 0 in $5.006\,\text{ms}$. giving an error of 0.12%. This error can be corrected in software by making time adjustments every minute and/or every hour.

FIGURE 2B - PIC16C5X ALARM CLOCK SCHEMATIC (USING DIODES)

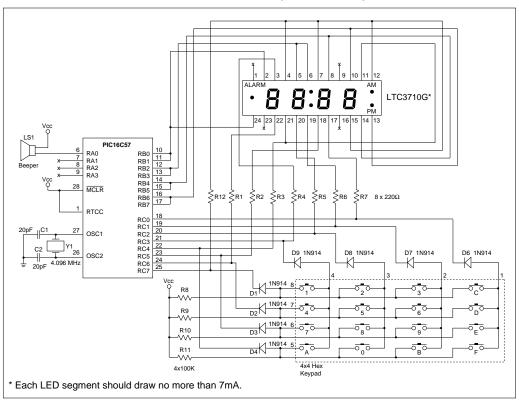
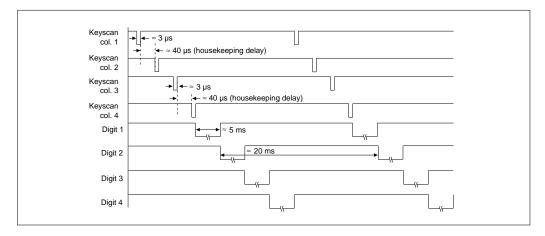


FIGURE 3 - KEY SCAN AND LED DIGIT SELECT TIMING



FEATURES

The Flow Chart (Figure 4) shows the sequence of events in the clock/timer software. The clock has the following features:

- 1. 12 hour clock with a.m./p.m.
- 2. 12 hour alarm with a.m./p.m.
- 3. Full function Hex keypad (Figure 5).
- 4. AA audible alarm for 1 minute.
- 5. 10 minute alarm disable.

SETTING CLOCK/TIMER FUNCTIONS

Function	Key Sequence to Activate Function
Set Real Time	$Set \to Hours \; (tens) \to Hours \to Minutes \; (tens) \to Minutes \to AM/PM \to Set$
View Alarm Time	Alarm (alarm time is displayed for 5 seconds)
Set Alarm Time	
Enable/Disable Alarm	Alarm → Alarm (toggles alarm status)
Disable AA alarm	Disable Alarm (disable audible beep for 10 minutes)
Clear Alarm	Clear Alarm (clears audible alarm)
Abort Entry	Clear Entry (aborts data entry mode when setting real and alarm time)

Notes:

- 1. Valid key strokes will be acknowledged with a beep.
- 2. Hours and minutes used above correspond to digits 0 9 on the keypad.

FIGURE 4 - TIMER/CLOCK FLOW CHART

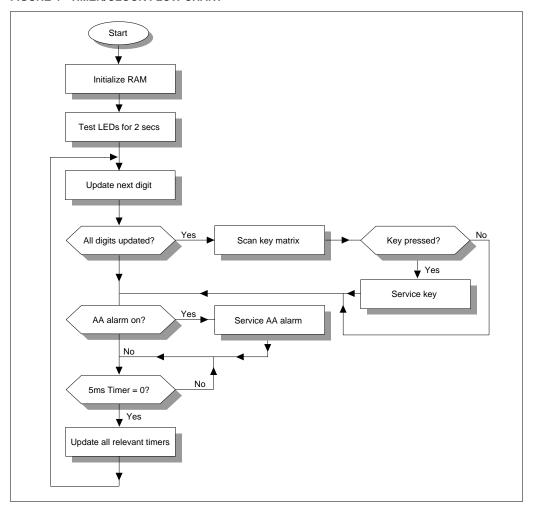


FIGURE 5 - KEYPAD

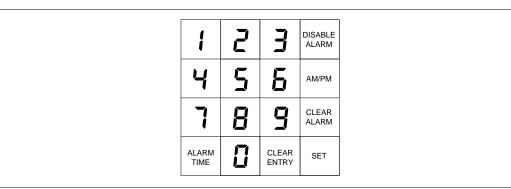
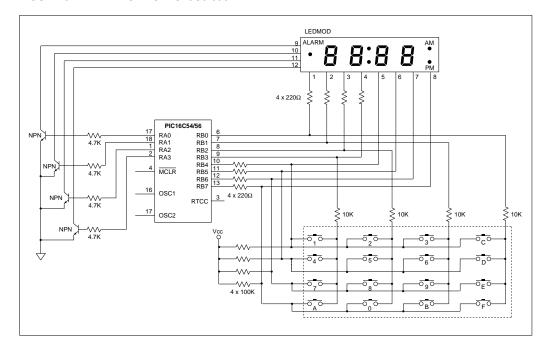


FIGURE 6 - INTERFACE TO PIC16C54/56



SUMMARY

This Application Note demonstrates a simple method of interfacing the PIC16C5X to 7-segment LEDs and a keypad. The key features of the PIC16C5X which made this possible are:

- High sink/source of the I/O ports.
- 2. Fast instruction cycle for quick key-scan.
- RISC processor allowing minimal overhead for real time clock maintenance.
- Reconfigurable I/O ports, enabling dual functionality of ports.

Figure 6 depicts a block diagram connecting a PIC16C54/56 to a 4-digit, 7-segment LED display and a 4x4 hex keypad. Since only 12 I/O pins are available in the PIC16C54/56, external npn transistor will have to be utilized to sink the current from each digit.

CODE SIZE

Key scan \rightarrow 97 bytes Display update \rightarrow 113 bytes

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APPENDIX A: CODE LISTING

```
CLK.ASM 7-15-1994 13:15:10
MPASM 1.00 Released
                                                                PAGE 1
Alarm Clock
LOC OBJECT CODE
                  LINE SOURCE TEXT
                                                "Alarm Clock"
                  0001
                                    TITLE
                  0002
                             LIST P = 16C57, f = inhx8m
                  0003;
                  0004 ; Define Equates:
                  0005;
07FF
                  0006
                              PIC57 EOU
                                            7FFH
                  0007
                  *************
                  0008 ;External Ossc. used = 4.096Mhz. Prescaler of 32 used, which gives a
                  0009 ;31.25 microSec increment of the RTCC. If RTCC is intially loaded with
96,
                  0010 ;it would overflow to 0 in 5.000 milliSecs. Giving a 0.00% error.
                                          D'96'
0060
                  0011
                             MSEC5 EOII
                  0012
0000
                             C
                                     EQU
                  0013
                                            0
0000
                  0014
                              BEP
                                     EQU
0000
                  0015
                              RTATS
                                     EOU
                                            0
0001
                  0016
                              DC
                                     EQU
0001
                  0017
                             HR10
                                     EOU
0002
                  0018
                              7.
                                     EOU
0002
                  0019
                              HR
                                     EQU
0003
                  0020
                              MIN10
                                     EQU
0004
                  0021
                             MTN
                                     EOU
0004
                  0022
                              FLASH
                                     EQU
0005
                  0023
                              PA0
                                     EQU
                  0024
                              KEY_BEEP EQU
0005
0005
                  0025
                              AMPM
                                     EQU
0006
                  0026
                              PA1
                                     EOU
0000
                  0027
                              F0
                                     EQU
0006
                  0028
                             KEY_HIT EQU
0006
                  0029
                              ALED
                                     EQU
0007
                  0030
                              AM PM
                                     EOU
0003
                  0031
                              COLON
                                     EQU
                                            3
0002
                  0032
                             ALRMLED EOU
0007
                             SERVICED EQU
0000
                  0034
                              ALONOF EQU
                  0035
0001
                              INAL
                                     EOU
0002
                  0036
                              SILNC
                                     EQU
0003
                  0037
                              INAA
                                     EOU
                  0038
                              INKEYBEP EOU
0005
                  0039;
                  0040 ; DEFINE RAM LOCATIONS:
0001
                  0041
                              RTCC
                                     EQU
0002
                  0042
                              PC
                                     EOU
0003
                  0043
                             STATUS EOU
0004
                  0044
                             FSR
                                     EOU
0005
                  0045
                              PORT_A EQU
0006
                  0046
                              PORT_B EQU
0007
                              PORT_C EQU
                  0048 ; DEFINE REAL TIME MODE REGS (RTM)
0008
                  0049
                         MSTMR EQU 8 ;MILLI SEC. TIMER
0009
                              STMR
                                     EQU
                                                   ;SEC. TIMER
                  0051 ;****************************
                  0052 ; DO NOT CHANGE RELATIVE POSITION OF NEXT 6 BYTES
                                          0A
0B
000A
                              MTMR EQU
                                   EQU
000B
                  0054
                              HTMR
                                                   ;HOUR TIMER
                  0055 ; DEFINE ALARM TIME MODE REGS (ATM)
000C
                             MALARM EQU 0C
                                                 ;MIN. ALARM
000D
                              HALARM EQU
                                           0D
                                                   HOUR ALARM
                  0058 ; DEFINE DATA ENTRY MODE REGS (DEM)
```

```
000E
                       0059
                                     MENTRY EQU
                                                                ;MIN. ENTRY
000F
                       0060
                                     HENTRY EQU
                                                       7O
                                                                ;HOUR ENTRY
                       0061 ;***************************
                       0063 ;
                       0064 ; DEFINE FLAG REG AND FUNCTION:
0010
                       0065
                                FLAG EQU 10
                                     BIT # 7|6|5|4|3|2|1|0|
                       0067 ;-
                                    --|-|-|-|-|-|-|
                       0068;
                                            X|X|X|X|X|X|0|0| -> REAL TIME MODE (RTM)
                       0069;
                                            X|X|X|X|X|X|0|1| \rightarrow ALARM TIME MODE(ATM)
                                            X | X | X | X | X | X | 1 | 0 | \rightarrow DATA ENTRY MODE(DEM)
                       0070;
                       0071;
                                           X|X|X|X|X|X|1|1| \rightarrow TEST MODE (TM)
                       0072 ;
                                            X | X | X | X | X | Y | X | X | \rightarrow ALRMLED ON/OFF
                                            X | X | X | X | Y | X | X | X | \rightarrow COLON LED ON/OFF
                       0073 ;
                       0074;
                                            X X X X Y X X X X -> FLASH DISPLAY
                       0075 ;
                                            X | X | Y | X | X | X | X | X | \longrightarrow KEY_BEEP
                       0076;
                                            X|Y|X|X|X|X|X| \rightarrow KEY_{HIT} (0/1)
                                            Y|X|X|X|X|X|X| -> SERVICED
                       0078 ; X = DEFINED ELSEWHERE IN TABLE
                       0079; Y = DEFINED AS SHOWN (0/1)
                       0080;
0011
                       0081
                                     TEMP
                                              EQU
0012
                       0082
                                     DIGIT EOU
0013
                                     NEW_KEY EQU
                       0083
                                     KEY_NIBL EQU
0014
                       0084
                                                       14
0015
                       0085
                                     DEBOUNCE EOU
                                                       15
0016
                       0086
                                     MIN_SEC EQU
                                                       16
                                                                ;MIN/SECONDS TIMER
                                     ENTFLG EQU
0017
                       0087
                                                       17
                       0088 ;flag dedicated to the key entry mode
                       0089; BIT # 7 6 5 4 3 2 1 0
                       0090 ;-
                                    0091;
                                            X|X|X|X|X|X|Y| -> REAL/ALARM TIME STATUS
                       0092;
                                            X | X | X | X | X | X | Y | X | \rightarrow HR10 DONE
                       0093;
                                            X | X | X | X | X | Y | X | X | -> HR DONE
                       0094 ;
                                            X|X|X|X|Y|X|X|X| \rightarrow MIN10 DONE
                       0095;
                                           X|X|X|Y|X|X|X|X| \rightarrow MIN DONE
                       0096;
                                            X|X|Y|X|X|X|X| \longrightarrow INKEYBEP
                       0097 ;
                                            X|Y|X|Y|X|X|X|X| \rightarrow NOT USED
                       0098;
                                            Y|X|X|X|X|X|X|X| \rightarrow NOT USED
                       0099;
                       0100 ;
0018
                       0101
                                     ALFLAG EQU
                       0102 ;flag dedicated to the alarm
                       0103; BIT # 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
                                    -|-|-|-|-|-|-
                       0104 ;-
                       0105 ;
                                            X | X | X | X | X | X | X | Y | \rightarrow ALONOF
                       0106 ;
                                            X|X|X|X|X|X|Y|X| \rightarrow INAL
                       0107 ;
                                            X|X|X|X|X|Y|X|X| \rightarrow SILNC
                       0108 ;
                                            X | X | X | X | Y | X | X | X | \rightarrow INAA
                       0109 ;
                                            X|X|X|Y|X|X|X|X| \rightarrow NOT USED
                       0110 ;
                                            X|X|Y|X|X|X|X| \rightarrow NOT USED
                       0111 ;
                                            X|Y|X|Y|X|X|X|X| \rightarrow NOT USED
                       0112 ;
                                            Y|X|X|X|X|X|X|X| \rightarrow NOT USED
                       0113 ;
0019
                       0114
                                     AAFLAG EOU
                       0115 ;flag dedicated to the AA alarm
001A
                       0116
                                     AATMR EOU
                       0117 ;
                       0118 ;Port pin definitions:
                       0119 ;
                       0120 ; PORT_A:
                       0121 ;
                                    BIT 0 -> BEEPER (ACTIVE LOW) OUTPUT
                       0122 ;
                                     BIT 1-3 -> unused I/O
                       0123 ;
                       0124 ; PORT_B: ALL OUTPUTS
                                     BIT 0&4 -> MSB DIGIT COMMON CATHODE & ALARM
                       0125 ;
                       0126 ;
                                     BIT 1&5 -> 2ND DIGIT COMMOM CATHODE & COLON
                                     BIT 2&6 -> 3RD DIGIT COMMON CATHODE & PM
                       0128 ;
                                     BIT 3&7 -> LSB DIGIT COMMON CATHODE & AM
```

```
0129 ;
                    0130 ; PORT_C:
                    0131 ; IN DISPLAY MODE ALL SEG/ANNN SET AS OUTPUTS
                    0132 ; IN KEY SCAN MODE COLS ARE OUTPUTS ROWS ARE INPUTS
                    0133 ;
                                BIT 0 -> SEGMENT A & COL 4
                    0134 ;
                               BIT 1 -> SEGMENT B & COL 3
                    0135 ;
                               BIT 2 -> SEGMENT C & COL 2
                    0136 ;
                               BIT 3 -> SEGMENT D & COL 1
                                       -> SEGMENT E & ROW 4
                    0137 ;
                                BIT 4
                              BIT 5 -> SEGMENT F & ...
BIT 6 -> SEGMENT G & ROW 2
                    0138 ;
                    0139 ;
                               BIT 7 -> CA OF ALL ANNUNCIATORS & ROW 1
                    0140 ;
                    0141 ;
                    0142 ;
                    0145
                                 ORG
                    0146 START
0000 OAFC
                    0147
                                GOTO
                                        INIT CLK
                                                        ; INITIALIZE CLOCK
                    0148 ; THIS ROUTINE RUNS A TEST ON THE LEDS.
                    0149 ;ALL THE RELEVENT LEDS ARE LIT UP FOR 2 SECS.
                    0150 ;
                    0151 TEST_HARDWARE
0001 0C02
                    0152 MOVLW
                                       d'02'
                                                        ;DISPLAY FOR 2 SECS
0002 0036
                                MOVWF MIN_SEC
                    0153
                    0154 ;
                    0155 ;
                    0156 TEST_LOOP
                    0157 MOVF
0003 0216
                                       MIN_SEC,W
                                                        GET MIN/SEC
                                                   ;NOT 0 THEN SKIP ;ELSE NORMAL TIME
0004 0643
                   0158
                               BTFSC STATUS, Z
0005 0A0B
                   0159
                               GOTO NORM_TIME
                               CALL UPDATE_DISPLAY ; UPDATE DISPLAY
0006 0925
                   0160
0007 05A3
                   0161
                              BSF
CALL
                                       STATUS, PAO ;GOTO PAGE 1
UPDATE_TIMERS ;WAIT AND UPDATE
                                      UPDATE_TIMEAL
STATUS,PA0
0008 0900
                   0162
                               BCF
0009 04A3
                   0163
                                                       RESET PAGE MARKER
                         GOTO TEST_LOOP
000A 0A03
                   0164
                                                       ;LOOP BACK
                   0165 NORM_TIME
                                       FLAG,0
000B 0410
                    0166 BCF
                                                        PIT IN REAL TIME
000C 0430
                    0167
                                BCF
                                        FLAG,1
                   0168 TIME_LOOP
                   0169 CALL UPDATE_DISPLAY
000D 0925
000E 05C3
                   0170
                               BSF
                                       STATUS, PA1
                                                        ;GOTO PAGE 2
                                      SERVICE_KEYS
000F 0900
                   0171
                             CALL
                             BSF STATUS,PAO ;GOTO PAGE 3
CALL SOUND_AA ;CHECK ALARM
BCF STATUS,PA1 ;GOTO PAGE 1
CALL UPDATE_TIMERS ;WAIT AND UPDATE TIMERS
                                        STATUS, PA0
0010 05A3
                   0172
0011 0900
                   0173
0012 04C3
                   0174
0013 0900
                  0175
                              BCF STATUS, PAO ; RESET PAGE MARKER
0014 04A3
                  0176
                                        STATUS,PA1
0015 04C3
                   0177
                                BCF
0016 0210
                    0178
                                MOVF
                                                        ;SEE IF IN ATM
                                        FLAG.W
                                ANDLW B'00000011'
0017 OE03
                   0179
                                                        ;
0018 0F01
                  0180
                               XORLW B'00000001'
                                                               /
0019 0643
                  0181
                               BTFSC STATUS, Z
                                                        ;SKIP IF NOT
001A 091C
                   0182
                                CALL RESET_ATM
001B 0A0D
                    0183
                                GOTO
                                        TIME_LOOP
                    0184 ;
                   0185 RESET_ATM
001C 0216
                   0186 MOVF
                                       MIN SEC, W
                                                        GET MIN/SEC
001D 0E0F
                   0187
                                ANDLW B'00001111'
001E 0743
                   0188
                               BTFSS STATUS, Z
                                                       Z THEN SKIP
001F 0800
                    0189
                                RETLW
                                                        ;ELSE RETURN
0020 0410
                   0190
                                BCF
                                        FLAG,0
                                                        ;SET TO RTM
0021 0450
                               BCF
                   0191
                                        FLAG ALRMIED
                                                        CLEAR LED
0022 0618
                   0192
                               BTFSC ALFLAG, ALONOF ; TEST STAT
0023 0550
                    0193
                                BSF
                                        FLAG, ALRMLED
                                                        SET LED
0024 0800
                    0194
                                RETLW
                                                        ; RETURN
                    0196;
                    0197 ;
                    0198 UPDATE_DISPLAY
0025 0C00
                    0199
                                MOVLW B'00000000'
                                                        ;CLEAR SEG DRIVE
```

0026 0027	0200	MOVWF	PORT_C	; /
0027 OC3F	0201	MOVLW	B'00111111'	;SEE IF LAST DIGIT
0028 0186	0202	XORWF	PORT_B,0	; /
0029 0643	0203	BTFSC	STATUS, Z	; NO THEN SKIP
002A 0A6F	0204	GOTO	SCAN_KP	;ELSE SCAN KEYPAD
	0205 UP_DS	P_1		
	0206 ;SELE	CT DIGIT T	TO BE DISPLAYED	
002B 0246	0207	COMF	PORT_B,0	GET COMPL. PORT B IN W
002C 0643	0208	BTFSC	STATUS, Z	; NO DIGIT SELECTED?
002D 0CC0	0209	MOVLW	B'11000000'	THEN SELECT DEFAULT
002E 0031	0210	MOVWF	TEMP	;SAVE IN TEMP
002F 0271	0211	COMF	TEMP	COMPLEMENT VALUE
0030 0503	0212	BSF	STATUS, C	SET CARRY
0031 0371	0213	RLF	TEMP	;SHIFT LEFT
0032 0703	0214	BTFSS	STATUS,C	; IF C=1 THEN SKIP
0033 0371	0215	RLF	TEMP	;ELSE 3 TIMES
0034 0371	0216	RLF	TEMP	THRU CARRY
0035 0211	0217	MOVF	TEMP, 0	GET IN W
0036 0026	0218	MOVWF	PORT_B	;OUTPUT TO PORT
				SELECT SEG VALUES FOR THAT DIGIT
			DE OF OPERATION	
0037 OCOA	0221	MOVLW	MTMR	;LOAD FSR WITH MTMR
0038 0024	0222	MOVWF	FSR	<i>;</i> /
0039 0210	0223	MOVF	FLAG,0	GET FLAG IN W
003A 0E03	0224	ANDLW	B'00000011'	; MASK OTHER BITS
003B 0031	0225	MOVWF	TEMP	;SAVE IN TEMP
003C 0F03	0226	XORLW	B'00000011'	; IN TEST MODE
003D 0643	0227	BTFSC	STATUS, Z	; NO THEN SKIP
003E 0A4B	0228	GOTO	DO_TM	;ELSE TEST MODE
003F 0403	0229	BCF	STATUS, C	CLEAR CARRY
0040 0371	0230	RLF	TEMP	;LEFT SHIFT TEMP
0041 0211	0231	MOVF	TEMP, 0	GET IN W
0042 01E4	0232	ADDWF	FSR	; CHANGE INDIRECT POINTER
0043 0954 0044 0032	0233	CALL	GET_7_SEG	GET 7 SEG DATA IN W
	0234	MOVWF	DIGIT	;SAVE IN DIGIT LOC. ;MASK ANNC TO DIGIT
0045 09D1 0046 0690	0235	CALL	MASK_ANNC	
0046 0690 0047 094E	0236 0237	BTFSC CALL	FLAG,FLASH CHK_HALF_SEC	; NO FLASH THEN SKIP ; ELSE CHK. IF ON
0047 034E	0237	MOVF	DIGIT, 0	GET BACK DIGIT
0048 0212	0238	MOVWF	PORT_C	OUTPUT TO PORT
0049 0027 004A 0800	0240	RETLW	0	;RETURN
00111 0000	0241 ;	KELEW	Ü	/ REFORM
	0242 DO TM			
004B 0CFF	0243	MOVLW	B'11111111'	;LIGHT ALL SEGMENTS
004C 0027	0244	MOVWF	PORT_C	; /
004D 0800	0245	RETLW	0	RETURN FROM UPDATE DISPLAY
0012 0000	0246 ;	1021211	·	AND TOTAL TROST OF BITTE BIDE BITTE
	0247 CHK_H	ALF SEC		
004E 0770	0248	BTFSS	FLAG, COLON	; IF COLON ON THEN DO
004F 0A51	0249	GOTO	BLANK_DSP	;ELSE BLANK DISPLAY
0050 0800	0250	RETLW	0	
	0251 BLANK	DSP		
0051 0C00	0252	MOVLW	B'00000000'	; MAKE PORT C LOW
0052 0032	0253	MOVWF	DIGIT	
0053 0800	0254	RETLW	0	
	0255 ;			
	0257 ;			
	0258 ;ON E	NTRY FSR I	POINTS TO THE R	EAL TIME MODE'S MINUTES REGISTER.
	0259 ;ON R	ETURN FSR	POINTS TO THE ?	TIMER REGISTER TO BE DISPLAYED.
	0260 ;W RE	G. CONTAIN	IS THE DECODED '	7 SEG. INFO OF THE DIGIT
	0261 ;TO B	E DISPLAYE	ED	
	0262 ;			
	0263 GET_7	_SEG		
0054 0246	0264	COMF	PORT_B,0	;COMPLEMENT B -> W
0055 0EF0	0265		B'11110000'	; MASK LO NIBBLE
0056 0643	0266	BTFSC	•	;NZ THEN SKIP
0057 02A4	0267	INCF	FSR	;INC POINTER
0058 0200	0268	MOVF	F0,0	;MOVE INDIRECT TO W
0059 0031	0269	MOVWF	TEMP	GET INTO TEMP

```
005A 0246
                    0270
                                 COME
                                        PORT_B,0
                                                        ;COMPL.B -> W
                                ANDLW B'11110000'
005B 0EF0
                    0271
                                                      ; MASK LO NIBBLE
005C 0643
                    0272
                                 BTFSC STATUS, Z
                                                      ; IF D1/2 THEN
005D 04F1
                    0273
                                BCF
                                        TEMP, AM_PM
                                                        ;CLEAR AM/PM BIT
005E 0246
                    0274
                                COMF
                                        PORT_B,0
                                                        GET PORT B AGAIN
005F 0ECC
                   0275
                                ANDLW B'11001100'
                                                       ;SEE IF D2 OR D4
0060 0643
                   0276
                               BTFSC STATUS, Z
                                                     ;YES THEN SKIP
0061 03B1
                   0277
                               SWAPF
                                       TEMP
                                                       ;SWAP TEMP
0062 OCOF
                    0278
                                        B'00001111'
                                                        ; MASK HI NIBBLE
                                MOVLW
0063 0151
                    0279
                                ANDWF
                                        TEMP. 0
0064 01E2
                   0280
                                ADDWF
                                                        ; ADD TO PC
0065 083F
                   0281
                               RETLW B'00111111'
                                                    ; CODE FOR 0
0066 0806
                    0282
                                RETLW B'00000110'
                                                      ; CODE FOR 1
                                       B'01011011'
0067 085B
                    0283
                                RETLW
                                                        ; CODE FOR 2
0068 084F
                    0284
                                RETLW
                                        B'01001111'
                                                        ; CODE FOR 3
0069 0866
                    0285
                                RETLW
                                        B'01100110'
                                                        ; CODE FOR 4
006A 086D
                    0286
                                        B'01101101'
                                                        CODE FOR 5
                                RETLW
006B 087D
                   0287
                                RETLW
                                       B'01111101'
                                                       ; CODE FOR 6
006C 0807
                    0288
                                RETLW
                                       B'00000111'
                                                        ; CODE FOR 7
                                       B'01111111'
                                                      ; CODE FOR 8
006D 087F
                    0289
                                RETLW
006E 0867
                    0290
                                       B'01100111'
                                                        ; CODE FOR 9
                                RETLW
                    0291 ;
                    0292 ; This routine scans the 4x4 hex key pad for a key hit.
                    0293 ; If key is pressed, KEY_HIT flag is set and the value of
                    0294 ; the hex key is returned in reg NEW_KEY
                    0295 ; If no key is detected, then a 0xff value is returned in
                    0296 ;register NEW_KEY and the flag KEY_HIT is reset.
                    0297;
                    0298 SCAN_KP
006F 06D0
                    0299
                                BTFSC FLAG, KEY_HIT ; KEY UNDER SERVICE?
                                                     ;YES SKIP ROUTINE
0070 0A2B
                    0300
                                GOTO
                                        UP DSP 1
0071 OCFF
                    0301
                                MOVLW
                                        B'11111111'
                                                        ;SET DIGIT SINKS ...
0072 0026
                    0302
                                MOVWF
                                        PORT_B
                                                        ;TO HIGH
                                MOVLW B'11110111' ;SET KEY COL LOW
0073 OCF7
                   0303
0074 0031
                    0304
                                MOVWF TEMP
                                                        SAVE IN TEMP
                    0305 SKP1
                                MOVLW B'0000000'
0075 OC00
                    0306
                                                        SET PORT C AS OUTPUTS
0076 0007
                    0307
                                        PORT_C
                                TRIS
0077 0211
                    0308
                                MOVF
                                        TEMP,W
                                                        ;DISCHARGE PINS
0078 OEOF
                                ANDLW B'00001111'
                    0309
0079 0027
                    0310
                               MOVWF PORT_C
007A 0CF0
                    0311
                                MOVLW B'11110000'
                                                      ;SET AS I/O
                                        PORT_C
007B 0007
                    0312
                                TRIS
007C 0211
                   0313
                                MOVF
                                        TEMP,W
                                                        GET OLD VALUE
007D 0027
                               MOVWF PORT_C
                                                      ;OUTPUT TO PORT
                   0.314
007E 0207
                   0315
                               MOVF
                                        PORT_C,W
                                                      ;INPUT PORT VALUE
                                ANDLW B'11110000'
007F 0EF0
                   0316
                                                      ; MASK LO BYTE
0080 OFF0
                    0317
                                XORLW
                                        B'11110000'
                                                        ;SEE IF KEY HIT
                    0318
0081 0743
                                 BTFSS
                                        STATUS, Z
                                                        INO KEY THEN SKIP
0082 0A8D
                    0319
                                 GOTO
                                        DET_KEY
                                                        ;LOAD KEY VALUE
                    0320 SKP3
0083 0503
                    0321
                                BSF
                                        STATUS, C
                                                        ;SET CARRY
0084 0331
                    0322
                                RRF
                                        TEMP
                                                        ; MAKE NEXT COL. LOW
0085 0603
                    0323
                                BTFSC
                                        STATUS, C
                                                        ;ALL DONE THEN SKIP
0086 0A75
                    0324
                                GOTO
                                        SKP1
0087 0073
                   0325
                                        NEW KEY
                                                        ;SET NEW KEY = FF
                                CLRE
0088 00F3
                    0326
                                DECF
                                      NEW KEY
                    0327 SKP2
0089 0067
                                CLRF
                                        PORT C
                                                        ;SETPORT C AS ...
                    0328
008A 0C00
                    0329
                                 MOVLW
                                        B'00000000'
                                                        ; OUTPUTS
008B 0007
                    0330
                                 TRIS
                                        PORT_C
008C 0A2B
                    0331
                                 COTO
                                        UP_DSP_1
                                                        ; RETTIEN
                    0332 DET_KEY
                    0333 ;key is detected
008D 0293
                                                        ;CHK IF KEY ...
                    0334
                                INCF
                                       NEW KEY.W
008E 0743
                    0335
                                 BTFSS
                                        STATUS, Z
                                                        ;WAS RELEASED
008F 0A89
                    0336
                                GOTO
                                        SKP2
                                                        ; NO THEN RETURN
0090 0207
                    0337
                                MOVF
                                        PORT_C,W
                                                        ;GET RAW KEY...
0091 0D0F
                    0338
                                IORLW B'00001111'
                                                        ; VALUE.
```

0092 0151 0339 ANDWF TEMP,W ; / 0093 0033 0340 MOVWF NEW_KEY ;SAVE IN NEW_KEY 0094 0998 0341 CALL GET_KEY_VAL ;GET ACTUAL KEY 0095 0033 0342 MOVWF NEW_KEY ;VALUE 0096 05D0 0343 BSF FLAG,KEY_HIT ;SET KEY HIT FLY 0097 0A89 0344 GOTO SKP2 ;RETURN 0345 ; 0347 ;This routine decodes the hex value from the "ra 0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 77 0351 ; TWO EQU 77 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0DB 0359 ; EIGHT EQU ODB 0360 ; NINE EQU ODD	 G
0093 0033 0340 MOVWF NEW_KEY ;SAVE IN NEW_KEY 0094 0998 0341 CALL GET_KEY_VAL ;GET ACTUAL KEY 0095 0033 0342 MOVWF NEW_KEY ;VALUE 0096 05D0 0343 BSF FLAG,KEY_HIT ;SET KEY HIT FLAG 0097 0A89 0344 GOTO SKP2 ;RETURN 0345 ; 0347 ;This routine decodes the hex value from the "rag 0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7C 0354 ; FOUR EQU 0BF 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0DB 0359 ; EIGHT EQU 0DB	 G
0094 0998 0341 CALL GET_KEY_VAL ; GET ACTUAL KEY 0095 0033 0342 MOVWF NEW_KEY ; VALUE 0096 05D0 0343 BSF FLAG,KEY_HIT ; SET KEY HIT FLAG 0097 0A89 0344 GOTO SKP2 ; RETURN 0345 ; 0347 ; This routine decodes the hex value from the "rag 0348 ; from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0BF 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BB 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0DB 0359 ; EIGHT EQU ODB	 G
0095 0033 0342 MOVWF NEW_KEY ;VALUE 0096 05D0 0343 BSF FLAG,KEY_HIT ;SET KEY HIT FLX 0097 0A89 0344 GOTO SKP2 ;RETURN 0345 ; 0347 ;This routine decodes the hex value from the "ra 0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BB 0356 ; SIX EQU 0BC 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0DF 0359 ; EIGHT EQU 0DB	G
0097 0A89 0344 GOTO SKP2 ;RETURN 0345 ; 0347 ;This routine decodes the hex value from the "ra 0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BB 0356 ; SIX EQU 0BB 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0DF 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DB	
0097 0A89 0344 GOTO SKP2 ;RETURN 0345 ; 0347 ;This routine decodes the hex value from the "ra 0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BB 0356 ; SIX EQU 0BB 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0DF 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DB	
0347 ;This routine decodes the hex value from the "ra 0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DB	w" data got
0348 ;from scanning the rows and cols. 0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB	w" data got
0349 ; actual key value raw hex value 0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB	
0350 ; ONE EQU 77 0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB	
0351 ; TWO EQU 7B 0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB	
0352 ; THREE EQU 7D 0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0353 ; C EQU 7E 0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0354 ; FOUR EQU 0B7 0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0355 ; FIVE EQU 0BB 0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0356 ; SIX EQU 0BD 0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0357 ; D EQU 0BE 0358 ; SEVEN EQU 0D7 0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0358; SEVEN EQU 0D7 0359; EIGHT EQU 0DB 0360; NINE EQU 0DD	
0359 ; EIGHT EQU 0DB 0360 ; NINE EQU 0DD	
0360; NINE EQU ODD	
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U.S.b.L.j. E. E.OU UDE	
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0362 ; A EQU 0E7	
0363; ZERO EQU 0EB	
0364 ; B EQU 0ED	
0365 ; F EQU 0EE	
0366 ;	
0367 ;	
0368 GET_KEY_VAL	
0098 0E0F 0369 ANDLW B'00001111' ;GET LO NIBBLE 0099 0034 0370 MOVWF KEY NIBL ;SAVE	
0099 0034 0370 MOVWF KEY_NIBL ;SAVE 009A 0C04 0371 MOVLW 4 ;SET COUNT TO 4	
009H 000H 0371 MOVEW 4 7SET COOK! TO 4	
0373 GKV1	
009C 0503 0374 BSF STATUS,C ;SET CARRY	
009D 0334 0375 RRF KEY_NIBL ;ROTATE NIBBLE	
009E 0703 0376 BTFSS STATUS,C ;SKIP IF NOT Z	
009F 0AA5 0377 GOTO GET_HI_KEY ;GOTO NEXT PART	
00A0 02F1 0378 DECFSZ TEMP ;DEC COUNT	
00A1 0A9C 0379 GOTO GKV1 ;LOOP	
0380 GO_RESET	
00A2 05A3 0381 BSF STATUS,PA0 ;SET MSB	
00A3 05C3 0382 BSF STATUS,PA1 ; /	
00A4 0BFF 0383 GOTO SYS_RESET ;ELSE BIG ERROR	
0384 GET_HI_KEY	
00A5 00F1 0385 DECF TEMP ; REDUCE BY 1	
00A6 0393 0386 SWAPF NEW_KEY,W ;GET HI NIBBLE	
00A7 0EOF 0387 ANDLW B'00001111' ; /	
00A8 0034 0388 MOVWF KEY_NIBL ;SAVE	
00A9 0211 0389 MOVF TEMP,W ;GET OFFSET TO T	BL
00AA 01E2 0390 ADDWF PC ;LOAD IN PC	
00AB 0AAF 0391 GOTO GET147A ;JUMP TO NEXT PA	RT
00AC 0AB8 0392 GOTO GET2580 ; /	
00AC 0AB8 0392 GOTO GET2580 ; / 00AD 0ABA 0393 GOTO GET369B ; / 00AE 0ABC 0394 GOTO GETCDEF ; /	
00AE 0ABC 0394 GOTO GETCDEF ; /	
0395 ;	
0396 GET147A	
00AF 0C04 0397 MOVLW 4 ;SET COUNT TO 4	
0398 GETCOM	
00B0 0031 0399 MOVWF TEMP ;	
0400 GETCOM1	
00B1 0503 0401 BSF STATUS,C ;SET CARRY	
00B2 0334 0402 RRF KEY_NIBL ;ROTATE RIGHT	
00B3 0703 0403 BTFSS STATUS,C ;CHECK IF DONE	
00B4 0ABE 0404 GOTO KEY_TBL ;JUMP TO TABLE	
00B5 02F1 0405 DECFSZ TEMP ;DEC COUNT	
00B6 0AB1 0406 GOTO GETCOM1 ;LOOP	
00B7 0AA2 0407 GOTO GO_RESET ;ELSE ERROR	
0408 ;	

00128	0C08	0409	GET2580	MOTAT M	8	;SET COUNT TO 8
	0AB0	0411		GOTO	GETCOM	/SEI COONI IO 0
		0412				
		0413	GET369B			
00BA	0C0C	0414		MOVLW	D'12'	;SET COUNT TO 12
00BB	0AB0	0415		GOTO	GETCOM	
		0416				
0059	0.01.0		GETCDEF		D. 11.61	. ann across no 16
	0C10 0AB0	0418 0419		MOVLW GOTO	D'16' GETCOM	;SET COUNT TO 16
עפטט	UABU	0421		GOIO	GEICOM	
			KEY TBL			
00BE	00F1	0423	KDI_IDE	DECF	TEMP	;REDUCE BY 1
	0211	0424		MOVF	TEMP,W	GET IN W
00C0	01E2	0425		ADDWF	PC	;JUMP TO TABLE
00C1	0801	0426		RETLW	1	;KEY 1
	0804	0427		RETLW		;KEY 4
	0807	0428		RETLW		;KEY 7
	080A	0429		RETLW		;KEY A
	0802	0430		RETLW		;KEY 2
	0805	0431		RETLW		;KEY 5 ;KEY 8
	0808 0800	0432 0433		RETLW RETLW		;KEY 0
	0803	0433		RETLW		;KEY 3
	0806	0435		RETLW		;KEY 6
	0809	0436		RETLW		;KEY 9
	080B	0437		RETLW		;KEY B
00CD	080C	0438		RETLW	0C	;KEY C
00CE	080D	0439		RETLW	0D	;KEY D
	080E	0440		RETLW		;KEY E
00D0	080F	0441		RETLW	0F	;KEY F
		0442				
		0444	, MASK_ANI	viC.		
00D1	0CFC	0446			B'11111100'	CHK IF DIGIT 1
	0186	0447		XORWF		; /
	0643	0448			STATUS, Z	;NO THEN SKIP
00D4	0AE5	0449		GOTO	MASK_ALARM	;ELSE MASK ALARM
00D5	0CF3	0450		MOVLW	B'11110011'	;CHK IF DIGIT 2
	0186	0451			PORT_B,0	; /
	0643	0452			STATUS, Z	; NO THEN SKIP
	OAE8	0453		GOTO	MASK_COLON	;ELSE MASK COLON
	OCCF	0454		MOVLW	B'11001111'	;CHK IF DIGIT 3
	0186 0643	0455 0456		BTFSC	PORT_B,0 STATUS,Z	; / ;NO THEN SKIP
	0AE1	0457		GOTO	MASK_PM	;ELSE MASK PM
OODC	OTILL		MASK_AM		ringic_i ri	/ DEGE PRIOR IN
00DD	02A4	0459			FSR	;INC FSR
00DE	07E0	0460		BTFSS	F0,AM_PM	; IF 0 THEN AM
00DF	OFEC	0461		D.C.D.		
0000	U5F Z	0461		BSF	DIGIT,7	;SET MSB
OOEO	0AEB	0461		GOTO	DIGIT,7 BLNK_LEAD_0	;SET MSB ;NEXT
	OAEB	0462 0463	MASK_PM	GOTO	BLNK_LEAD_0	; NEXT
00E1	0AEB 02A4	0462 0463 0464	MASK_PM	GOTO INCF	BLNK_LEAD_0 FSR	;NEXT;INC FSR
00E1 00E2	0AEB 02A4 06E0	0462 0463 0464 0465	MASK_PM	GOTO INCF BTFSC	BLNK_LEAD_0 FSR F0,AM_PM	;NEXT ;INC FSR ;IF 1 THEN PM
00E1 00E2 00E3	02A4 06E0 05F2	0462 0463 0464 0465 0466	MASK_PM	GOTO INCF BTFSC BSF	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7	; INC FSR ; IF 1 THEN PM ; SET MSB
00E1 00E2 00E3	0AEB 02A4 06E0	0462 0463 0464 0465 0466 0467	MASK_PM	GOTO INCF BTFSC BSF GOTO	BLNK_LEAD_0 FSR F0,AM_PM	; INC FSR ; IF 1 THEN PM ; SET MSB
00E1 00E2 00E3 00E4	0AEB 02A4 06E0 05F2 0AEB	0462 0463 0464 0465 0466 0467 0468	MASK_PM	GOTO INCF BTFSC BSF GOTO ARM	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT
00E1 00E2 00E3 00E4	02A4 06E0 05F2 0AEB	0462 0463 0464 0465 0466 0467 0468 0469	MASK_PM MASK_AL	GOTO INCF BTFSC BSF GOTO ARM BTFSC	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED
00E1 00E2 00E3 00E4 00E5 00E6	0AEB 02A4 06E0 05F2 0AEB	0462 0463 0464 0465 0466 0467 0468	MASK_PM MASK_AL	GOTO INCF BTFSC BSF GOTO ARM BTFSC	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED
00E1 00E2 00E3 00E4 00E5 00E6	0AEB 02A4 06E0 05F2 0AEB 0650 05F2	0462 0463 0464 0465 0466 0467 0468 0469 0470 0471	MASK_PM MASK_AL	GOTO INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED
00E1 00E2 00E3 00E4 00E5 00E6 00E7	0AEB 02A4 06E0 05F2 0AEB 0650 05F2	0462 0463 0464 0465 0466 0467 0468 0469 0470 0471	MASK_PM MASK_ALA MASK_CO	GOTO INCF BTFSC BSF GOTO ARM BTFSC GOTO LON BTFSC	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED
00E1 00E2 00E3 00E4 00E5 00E6 00E7	0AEB 02A4 06E0 05F2 0AEB 0650 05F2 0AEB 0670 05F2	0462 0463 0464 0465 0466 0467 0468 0469 0470 0471 0472 0473	MASK_PM MASK_ALA MASK_CO	INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO LON BTFSC BSF	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED ; /
00E1 00E2 00E3 00E4 00E5 00E6 00E7	0AEB 02A4 06E0 05F2 0AEB 0650 05F2 0AEB 0670	0462 0463 0464 0465 0466 0467 0468 0469 0470 0471 0472 0473 0474	MASK_PM MASK_ALA MASK_COL	INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO LON BTFSC BSF	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED
00E1 00E2 00E3 00E4 00E5 00E6 00E7	0AEB 02A4 06E0 05F2 0AEB 0650 05F2 0AEB 0670 05F2	0462 0463 0464 0465 0466 0467 0468 0470 0471 0472 0473 0474 0475	MASK_PM MASK_ALA MASK_COM ;	GOTO INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO LON BTFSC BSF GOTO	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED ; /
00E1 00E2 00E3 00E4 00E5 00E6 00E7 00E8 00E9	0AEB 02A4 06E0 05F2 0AEB 0650 05F2 0AEB 0670 05F2 0AEB	0462 0463 0464 0465 0466 0467 0468 0470 0471 0472 0473 0474 0475 0476	MASK_PM MASK_ALi MASK_COI ; BLNK_LEi	GOTO INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO LON BTFSC BSF GOTO AD_0	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7 BLNK_LEAD_0	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; ;NEXT ;1 THEN LIGHT LED ; ;NEXT
00E1 00E2 00E3 00E4 00E5 00E6 00E7 00E8 00E9 00EA	0AEB 02A4 06E0 05F2 0AEB 0650 05F2 0AEB 0670 05F2 0AEB	0462 0463 0464 0465 0466 0467 0468 0469 0471 0472 0473 0474 0475 0476 0477	MASK_PM MASK_ALi MASK_COI ; BLNK_LEi	GOTO INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO LON BTFSC BSF GOTO AD_0 MOVF	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7 BLNK_LEAD_0	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED ; / ;NEXT
00E1 00E2 00E3 00E4 00E5 00E6 00E7 00E8 00E9 00EA	0AEB 02A4 06E0 05F2 0AEB 0650 05F2 0AEB 0670 05F2 0AEB	0462 0463 0464 0465 0466 0467 0468 0470 0471 0472 0473 0474 0475 0476	MASK_PM MASK_ALi MASK_COI ; BLNK_LEi	GOTO INCF BTFSC BSF GOTO ARM BTFSC BSF GOTO LON BTFSC BSF GOTO AD_0 MOVF	BLNK_LEAD_0 FSR F0,AM_PM DIGIT,7 BLNK_LEAD_0 FLAG,ALRMLED DIGIT,7 BLNK_LEAD_0 FLAG,COLON DIGIT,7 BLNK_LEAD_0	;NEXT ;INC FSR ;IF 1 THEN PM ;SET MSB ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED ; / ;NEXT ;1 THEN LIGHT LED ; / ;NEXT

00ED 0F02				
	0480	XORLW	B'00000010'	; CHECK
00EE 0643	0481	BTFSC	STATUS,Z	; NO THEN DO
00EF 0800	0482	RETLW	0	;ELSE RETURN
00F0 0CFC	0483	MOVLW	B'11111100'	;SEE IF DIGIT 1
00F1 0186	0484	XORWF	PORT_B,0	; /
00F2 0743	0485	BTFSS	STATUS, Z	;YES THEN SKIP
00F3 0800	0486	RETLW	0	; RETURN
00F4 0C3F	0487	MOVLW	B'00111111'	;ELSE MASK G AND ANUNC
00F5 0152	0488	ANDWF	DIGIT, 0	GET IN W
00F6 0F3F	0489		D/00111111	;SEE IF 0
		XORLW	B'00111111'	/ SEE IF U
00F7 0743	0490	BTFSS	STATUS,Z	YES THEN SKIP
00F8 0800	0491	RETLW	0	; RETURN
00F9 0C80	0492	MOVLW	B'10000000'	;ELSE BLANK D1
00FA 0172	0493	ANDWF	DIGIT	; /
00FB 0800	0494			
0000 0000	0494	RETLW	0	;RETURN
	0495 ;			
	0496 ;			
	0497 ;			
	0499 ;			
	0500 ;	THIS ROUTINE S	SETS UP PORTS A,	B,C AND THE INTERNAL
	0501 ;	REAL TIME CLOC	K COUNTER.	
	0502 11	NIT_CLK		
00FC 0C0F	0503	MOVLW	B'00001111'	;MAKE ACTIVE HIGH
00FD 0025				
00FD 0025	0504		PORT_A	
00FE 0C00	0505	MOVLW	B'00000000'	;SET PORT A AS OUTPUTS
00FF 0005	0506	TRIS	PORT_A	
00FF 0005		IKIS	PORT_A	
	0507 ;			
0100 OCFF	0508	W.TVOM	B'11111111'	;SET LEVELS HIGH
0101 0026	0509	MOVWF	PORT_B	; /
0102 0C00	0510	MOVLW	B'00000000'	;SET PORT B AS OUTPUTS
0103 0006	0511	TRIS	PORT_B	
	0512 ;			
0104 0000		MOLITE	D. (00000000)	.CDM I DIVEL C I ON
0104 0C00	0513	MOVLW	B'00000000'	;SET LEVELS LOW
0105 0027	0514	MOVWF	PORT_C	; /
0106 0C00	0515	MOVLW	B'00000000'	;SET PORT C AS OUTPUTS
				/SEI PORI C AS OUIPUIS
0107 0007	0516	TRIS	PORT_C	; /
	0517 ;			
0108 0C04	0517	MOVLW	B'00000100'	;SET UP PRESCALER
	0518		B'00000100'	
0108 0C04 0109 0002	0518 0519	MOVLW OPTION	B'00000100'	; SET UP PRESCALER ; /
	0518		B'00000100'	
0109 0002	0518 0519 0520 ;	OPTION		; /
0109 0002 010A 0C60	0518 0519 0520 ; 0521	OPTION MOVLW	MSEC5	; / ;RTCC = 5 mSEC
0109 0002 010A 0C60 010B 0021	0518 0519 0520 ; 0521 0522	OPTION MOVLW MOVWF	MSEC5 RTCC	; / ;RTCC = 5 mSEC ; /
0109 0002 010A 0C60	0518 0519 0520 ; 0521	OPTION MOVLW	MSEC5 RTCC	; / ;RTCC = 5 mSEC
0109 0002 010A 0C60 010B 0021 010C 0068	0518 0519 0520 ; 0521 0522 0523	OPTION MOVLW MOVWF CLRF	MSEC5 RTCC MSTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069	0518 0519 0520 ; 0521 0522 0523 0524	OPTION MOVLW MOVWF CLRF CLRF	MSEC5 RTCC MSTMR STMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR
0109 0002 010A 0C60 010B 0021 010C 0068	0518 0519 0520 ; 0521 0522 0523	OPTION MOVLW MOVWF CLRF	MSEC5 RTCC MSTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A	0518 0519 0520; 0521 0522 0523 0524 0525	OPTION MOVLW MOVWF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12	0518 0519 0520; 0521 0522 0523 0524 0525	OPTION MOVLW MOVWF CLRF CLRF CLRF MOVLW	MSEC5 RTCC MSTMR STMR MTMR 12H	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A	0518 0519 0520; 0521 0522 0523 0524 0525	OPTION MOVLW MOVWF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12	0518 0519 0520; 0521 0522 0523 0524 0525	OPTION MOVLW MOVWF CLRF CLRF CLRF MOVLW	MSEC5 RTCC MSTMR STMR MTMR 12H	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C	0518 0519 0520 ; 0521 0522 0523 0524 0525 0526 0527 0528 0529	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVUWF MOVUWF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011'	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF MOVWF MOVUW MOVWF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF MOVWF MOVUW MOVWF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVUW MOVWF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0111 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVLW MOVUF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVUW MOVWF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0111 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVLW MOVUF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536;	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF CLRF MOVUW CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG AAFLAG ENTFLG TEST_HARDWARE	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537 72	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF CLRF MOVLW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLR	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above.	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536;	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF CLRF MOVUW CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLRF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above.	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537 71	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVLW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLR	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above.	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 2038; 2040 0540;	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF GOTO All routines r address 200 an	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above.	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 2038; 2040 0540;	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF MOVLW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLR	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above.	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 12 0538; 12 0540 0541; 0542 UI	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF CRF CRF CRF CRF CRF CRF CRF CRF CRF C	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above. 0200	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0111 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 20538; 20540 0541; 0542 UI	OPTION MOVUM MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVLW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLR	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above. 0200 RTCC,W	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 12 0538; 12 0540 0541; 0542 UI	OPTION MOVUM MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVLW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLR	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE related to timer d above. 0200	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 10532 0538; 10540 0541; 0542 0543	OPTION MOVUW MOVWF CLRF CLRF MOVUW MOVWF MOVWF CLRF CLRF CLRF CLRF CLRF GOTO All routines r address 200 an ORG	MSEC5 RTCC MSTMR STMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE celated to timer d above. 0200 RTCC,W STATUS,Z	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 2053 0540 0541; 0542 0543	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF GOTO All routines r address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG AAFLAG ENTFLG TEST_HARDWARE celated to timer dd above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 12 0548; 0540 0541; 0543 0544 0545	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CDTO All routines r address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO MOVLW	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG AAFLAG AAFLAG ENTFLG TEST_HARDWARE celated to timer d above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS MSEC5	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP ;RTCC = 5 mSEC
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 2053 0540 0541; 0542 0543	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF GOTO All routines r address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG AAFLAG AAFLAG ENTFLG TEST_HARDWARE celated to timer d above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS MSEC5	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 12 0540 0541; 0543 0544	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF CLRF CLRF CLR	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG AAFLAG ENTFLG TEST_HARDWARE celated to timer ad above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS MSEC5 RTCC	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP ;RTCC = 5 mSEC ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 20538; 20540 0541; 0542 0543 0544 0545 0546	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVWF MOVWF MOVWF CLRF CLRF CLRF GOTO All routines r address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO MOVLW MOVWF INCF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG ALFLAG ENTFLG TEST_HARDWARE celated to timer dd above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS MSEC5 RTCC MSTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP ;RTCC = 5 mSEC ; / ;INC 5 MILLI SEC
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 12 0540 0541; 0543 0544	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVWF MOVWF MOVWF CLRF CLRF CLRF GOTO All routines r address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO MOVLW MOVWF INCF	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG ALFLAG ENTFLG TEST_HARDWARE celated to timer dd above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS MSEC5 RTCC MSTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ; & MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP ;RTCC = 5 mSEC ; /
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01 0200 0201 0201 0743 0202 0A00 0203 0C60 0204 0021 0205 0228 0206 06D0	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 10540 0541; 0542 UI 0543 0546 0547 0548	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF GOTO All routines r Address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO MOVUW MOVWF INCF BTFSC	MSEC5 RTCC MSTMR STMR STMR MTMR 12H HTMR HALARM MALARM B'000000011' FLAG ALFLAG ALFLAG ENTFLG TEST_HARDWARE related to timer dabove. 0200 RTCC, W STATUS, Z UPDATE_TIMERS MSEC5 RTCC MSTMR FLAG, KEY_HIT	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP ;RTCC = 5 mSEC ; / ;INC 5 MILLI SEC ;NO KEY HIT THEN SKIP
0109 0002 010A 0C60 010B 0021 010C 0068 010D 0069 010E 006A 010F 0C12 0110 002B 0111 002D 0112 006C 0113 0C03 0114 0030 0115 0078 0116 0079 0117 0077 0118 0A01	0518 0519 0520; 0521 0522 0523 0524 0525 0526 0527 0528 0529 0530 0531 0532 0533 0534 0535 0536; 0537; 20538; 20540 0541; 0542 0543 0544 0545 0546	OPTION MOVUW MOVWF CLRF CLRF CLRF MOVUW MOVWF CLRF MOVUW MOVWF CLRF CLRF CLRF CLRF CLRF GOTO All routines r Address 200 an ORG PDATE_TIMERS MOVF BTFSS GOTO MOVUW MOVWF INCF BTFSC	MSEC5 RTCC MSTMR STMR MTMR 12H HTMR HALARM MALARM B'00000011' FLAG ALFLAG ALFLAG ENTFLG TEST_HARDWARE celated to timer dd above. 0200 RTCC,W STATUS,Z UPDATE_TIMERS MSEC5 RTCC MSTMR	; / ;RTCC = 5 mSEC ; / ;CLEAR MSTMR ; & SEC TMR ;& MINUTES ;MAKE HRS = 12 ; / ;MAKE HRS = 12 ; / ;SET TO TEST MODE ; / ;CLEAR ALL FLAG ; / ; updates are located at ;SEE IF RTCC = 0 ;IF 0 THEN SKIP ;ELSE LOOP ;RTCC = 5 mSEC ; / ;INC 5 MILLI SEC ;NO KEY HIT THEN SKIP

	0FF1 *** ***	m 1		
0208 0210	0551 UP_TI 0552	MR_1 MOVF	ELYC M	ALADM MODES
0208 0210 0209 0E03	0552	ANDLW	FLAG,W B'00000011'	;ALARM MODE? ; /
0209 0E03 020A 0F01	0554	XORLW	B'00000011	; /
020B 0743	0555	BTFSS	STATUS, Z	;SKIP IF YES
020C 0A14	0556	GOTO	UP_TMR_2	; DO NEXT
020D 0550	0557	BSF	FLAG, ALRMLED	;LIGHT LED
020E 0570	0558	BSF	FLAG, COLON	; /
020F 0C64	0559	MOVLW	D'100'	;IF 1/2 SEC
0210 0088	0560	SUBWF	MSTMR, 0	; BLINK
0211 0703	0561	BTFSS	STATUS, C	; /
0212 0450	0562	BCF	FLAG,ALRMLED	;ALARM LED
0213 0A19	0563	GOTO	UP_TMR_3	;SKIP
	0564 UP_T	MR_2		
0214 0570	0565	BSF	FLAG, COLON	;TURN ON
0215 0C64	0566	MOVLW	D'100'	;<100 BLINK COLON
0216 0088	0567	SUBWF	MSTMR,0	; /
0217 0703	0568	BTFSS	STATUS, C	;YES THEN SKIP
0218 0470	0569	BCF	FLAG, COLON	;ELSE TURN OFF
	0570 UP_T	MR_3		
0219 0208	0571	MOVF	MSTMR,0	GET MSTMR IN W
021A 0FC8	0572	XORLW	D'200'	;= 200 THEN SKIP
021B 0743	0573	BTFSS	STATUS, Z	; /
021C 0800	0574	RETLW	0	
		SECONDS CO	DUNT	
021D 0068	0576	CLRF	MSTMR	;CLEAR MS_TMR
021E 0216	0577	MOVF	MIN_SEC,W	GET MIN_SEC TIMER
021F 0E0F	0578	ANDLW	B'00001111'	;MASK MINUTES
0220 0743	0579	BTFSS	STATUS, Z	ZERO THEN SKIP
0221 00F6	0580	DECF	MIN_SEC	;REDUCE SECONDS
0222 0C09	0581	MOVLW	STMR	;LOAD FSR WITH S_TMR
0223 0024	0582	MOVWF	FSR	; /
0224 0955	0583	CALL	INC_60	;INC SECONDS
0225 0D00	0584	IORLW	0	;DO AN OPERATION
0226 0743	0585	BTFSS	STATUS, Z	; IF RETURN = 0 SKIP
			CHK_AL_TIM	;CHK ALRM
0227 0A38	0586	GOTO		
	0587 ;INC	MINUTES CO	DUNT	
0228 03B6	0587 ;INC 0588	MINUTES CO SWAPF	DUNT MIN_SEC	;SWAP MIN SEC
0228 03B6 0229 0216	0587 ;INC 0588 0589	MINUTES CO SWAPF MOVF	DUNT MIN_SEC MIN_SEC,W	;SWAP MIN SEC ;GET MIN_SEC IN W
0228 03B6 0229 0216 022A 0E0F	0587 ;INC 0588 0589 0590	MINUTES CO SWAPF MOVF ANDLW	OUNT MIN_SEC MIN_SEC,W B'00001111'	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS
0228 03B6 0229 0216 022A 0E0F 022B 0743	0587 ;INC 0588 0589 0590 0591	MINUTES CO SWAPF MOVF ANDLW BTFSS	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6	0587 ;INC 0588 0589 0590 0591 0592	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6	0587 ;INC 0588 0589 0590 0591 0592 0593	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966	0587 ;INC 0588 0589 0590 0591 0592 0593	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL	DUNT MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON?
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A	0587 ;INC 0588 0589 0590 0591 0592 0593 0594	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES
0228 03B6 0229 0216 022A 0EOF 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024	0587 ;INC 0588 0589 0590 0591 0592 0593 0594 0595	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ;
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; , , ;DO AN OPERATION
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022F 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743	0587 ;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; , , ;DO AN OPERATION
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0231 0024 0231 0955 0232 0D00 0233 0743 0234 0A38	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM F HTMR	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022F 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38	0587 ;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601 ;INC 0602	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0231 0024 0231 0955 0232 0D00 0233 0743 0234 0A38	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM F HTMR	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022F 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVUW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVUW MOVWF CALL	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0C0B 0236 0024 0237 0989	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM T HTMR FSR INC_HR	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022F 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0C0B 0236 0024 0237 0989	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM HTMR FSR INC_HTMR FSR INC_HTMR ALFLAG,ALONOF	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT
0228 03B6 0229 0216 0229 0216 0228 0743 022C 00F6 022D 03B6 022F 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVUW CALL AL_TIM BTFSS RETLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FSR INC_HAL_TIM FSR INC_HAL_TIM INC_HAL_TIM ALFLAG, ALONOF 0	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ;
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0C0B 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL AL_TIM BTFSS RETLW BTFSS	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVUW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVUW MOVWF CALL AL_TIM BTFSS RETLW BTFSC RETLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM F HTMR FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF O THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT ; / ;RET IF IN SILENCE
0228 03B6 0229 0216 022A 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0C0A 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0C0B 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608 0609 0610	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL AL_TIM BTFSS RETLW BTFSS	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM HTMR FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC 0 ALFLAG,SILNC	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT ; / ;RET IF IN SILENCE ;ALREADY DONE
0228 03B6 0229 0216 0229 0216 0229 0216 0228 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658 023B 0800 023C 0638	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL AL_TIM BTFSS RETLW BTFSC RETLW BTFSC	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC 0 ALFLAG,SILNC 0 ALFLAG,INAL CHK_1_MIN	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF O THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT ; / ;RET IF IN SILENCE
0228 03B6 0229 0216 0229 0216 0229 0216 0228 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658 023B 0800 023C 0638	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608 0609 0610 0611	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVUW MOVUW CALL STEEL MOVLW MO	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FSR INC_HR ALFLAG, ALONOF 0 ALFLAG, SILNC 0 ALFLAG, INAL CHK_1_MIN 0	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; / ;DO AN OPERATION ;IF 0 THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT ; / ;RET IF IN SILENCE ;ALREADY DONE ;SEE IF 1 MIN UP
0228 03B6 0229 0216 0229 0216 0229 0216 0228 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658 023B 0800 023C 0638 023D 0A4D	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608 0609 0610 0611 0612 0613;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL AL_TIM BTFSS RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FSR INC_HR ALFLAG, ALONOF 0 ALFLAG, SILNC 0 ALFLAG, INAL CHK_1_MIN 0	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ;
0228 03B6 0229 0216 0229 0216 0220 0E0F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 0230 0658 023B 0800 023C 0638 023D 0A4D	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_; 0607 0608 0609 0610 0611 0612 0613;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL I ORLW BTFSS GOTO HOUR COUNT MOVW MOVWF CALL AL_TIM BTFSS RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW MOVF	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM HTMR FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC 0 ALFLAG,INAL CHK_1_MIN 0 HALARM,W HTMR,W	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ; , , ,DO AN OPERATION ;IF O THEN SKIP ;CHECK ALRAM TIME ;GET HTMR IN FSR ;INC HOURS ;IF OFF QUIT ; ,RET IF IN SILENCE ;ALREADY DONE ;SEE IF 1 MIN UP ;YES THEN QUIT ;CHK HRS
0228 03B6 0229 0216 0229 0216 0229 0216 0228 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658 023B 0800 023C 0638 023D 0A4D 023E 020D 023F 018B	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608 0609 0610 0611 0612 0613;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL AL_TIM BTFSS RETLW BTFSC GOTO RETLW BTFSC GOTO RETLW BTFSC GOTO	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM HTMR FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC 0 ALFLAG,INAL CHK_1_MIN 0 HALARM,W HTMR,W	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ;
0228 03B6 0229 0216 0229 0216 0229 0216 0228 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658 023B 0800 023A 0658 023B 0800 023C 063B 023D 0A4D 023E 020D 023F 018B 0240 0743	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608 0609 0610 0611 0612 0613;	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVLW MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVLW MOVWF CALL AL_TIM BTFSS RETLW BTFSC RETLW BTFSC GOTO RETLW BTFSC RETLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FSR INC_HR ALFLAG,ALONOF 0 ALFLAG,SILNC 0 ALFLAG,INAL CHK_1_MIN 0 HALARM,W HTMR,W STATUS,Z	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ;
0228 03B6 0229 0216 0229 0216 0229 0216 0220 080F 022B 0743 022C 00F6 022D 03B6 022E 0966 022F 0COA 0230 0024 0231 0955 0232 0D00 0233 0743 0234 0A38 0235 0COB 0236 0024 0237 0989 0238 0718 0239 0800 023A 0658 023B 0800 023A 0658 023B 0800 023C 0638 023D 0A4D 023E 020D 023F 018B 0240 0743 0241 0800	0587;INC 0588 0589 0590 0591 0592 0593 0594 0595 0596 0597 0598 0599 0600 0601;INC 0602 0603 0604 0605; 0606 CHK_i 0607 0608 0609 0610 0611 0612 0613; 0614 0615	MINUTES CO SWAPF MOVF ANDLW BTFSS DECF SWAPF CALL MOVWF CALL IORLW BTFSS GOTO HOUR COUNT MOVUW CALL AL_TIM BTFSS RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW BTFSC RETLW	DUNT MIN_SEC MIN_SEC,W B'00001111' STATUS,Z MIN_SEC MIN_SEC CHK_SILNC_TIM MTMR FSR INC_60 0 STATUS,Z CHK_AL_TIM FINC_HR ALFLAG, ALONOF 0 ALFLAG, SILNC 0 ALFLAG, INAL CHK_1_MIN 0 HALARM,W HTMR,W STATUS,Z 0 MALARM,W	;SWAP MIN SEC ;GET MIN_SEC IN W ;MASK SECONDS ;SKIP IF NOT SET ;ELSE DEC ;SWAP BACK ;SILNCE ON? ;INC MINUTES ;

	4 0743	0620	BTFSS	STATUS, Z	;YES THEN SKIP
∪∠4:	5 0800	0621	RETLW	0	;ELSE RET
024	6 0209	0622	MOVF	STMR,W	;SEE IF SEC=0
024	7 0743	0623	BTFSS		;YES THEN SKIP
024	8 0800	0624	RETLW	0	; NO THEN RET
024	9 0538	0625	BSF	ALFLAG, INAL	;SET IN ALARM FLAG
	A 0C10	0626	MOVLW	10	;SET 1 MIN TIMER
	В 0036	0627	MOVWF	MIN_SEC	; /
	C 0800	0628	RETLW	0	•
		0629 ;			
			IK_1_MIN		
024	D 0396	0631	SWAPF	MIN_SEC,W	;SWAP IN W
	E OEOF	0632	ANDLW	B'00001111'	;CHK MINUTES
	F 0743	0633	BTFSS	STATUS, Z	; O THEN SKIP
	0 0800	0634	RETLW	0	;ELSE RET
	1 0438	0635	BCF	ALFLAG, INAL	CLR IN ALARM
025	2 0478	0636	BCF		CLR IN AA
	3 0505	0637	BSF		STOP BEEPER
025	4 0800	0638	RETLW	0	
		0639 ;			
		0640 IN	IC 60		
025	5 02A0	0641	INCF	F0	;INC AND GET IN W
025	6 0200	0642	MOVF	F0,0	; /
025	7 0E0F	0643	ANDLW	B'00001111'	; MASK HI BITS
025	8 0F0A	0644	XORLW	B'00001010'	;= 10 THEN MAKE IT 0
025	9 0743	0645	BTFSS	STATUS, Z	; /
025	A 0801	0646	RETLW	1	;ELSE RETURN NON ZERO
0251	B OCFO	0647	MOVLW	B'11110000'	;ZERO LSB
025	C 0160	0648	ANDWF	F0	; /
	D 03A0	0649	SWAPF	F0	;SWAP INDIRECT
025	E 02A0	0650	INCF	F0	;INC
025	F 0200	0651	MOVF	F0,0	GET IN W
026	0 03A0	0652	SWAPF	F0	;SWAP FO BACK
026	1 0F06	0653	XORLW	D'6'	;=6 THEN SKIP
026	2 0743	0654	BTFSS	STATUS, Z	; /
026	3 0801	0655	RETLW	1	;ELSE RETURN NZ
026	4 0060	0656	CLRF	F0	; /
026	5 0800	0657	RETLW	0	;RET 0
		0658 ;			
		0660 ;			
			K_SILNC_TIM		
026	6 0758		K_SILNC_TIM BTFSS	ALFLAG, SILNC	;CHK IF IN SILENCE
	6 0758 7 0800	0661 CH		ALFLAG, SILNC	CHK IF IN SILENCE; NO THEN SKIP
026		0661 CH 0662	BTFSS	0 MIN_SEC,W	;NO THEN SKIP ;GET MIN IN W
026 026	7 0800	0661 CH 0662 0663	BTFSS RETLW	0	; NO THEN SKIP
026 026 026	7 0800 8 0396	0661 CH 0662 0663 0664	BTFSS RETLW SWAPF	0 MIN_SEC,W	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO?
026 026 026 026	7 0800 8 0396 9 0E0F	0661 CH 0662 0663 0664 0665	BTFSS RETLW SWAPF ANDLW	0 MIN_SEC,W B'00001111' STATUS,Z	;NO THEN SKIP ;GET MIN IN W ;MASK SECS
026 026 026 026 026 026	7 0800 8 0396 9 0EOF A 0743 B 0800 C 0458	0661 CH 0662 0663 0664 0665 0666	BTFSS RETLW SWAPF ANDLW BTFSS	0 MIN_SEC,W B'00001111' STATUS,Z	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE
026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10	0661 CH 0662 0663 0664 0665 0666	BTFSS RETLW SWAPF ANDLW BTFSS RETLW	0 MIN_SEC,W B'00001111' STATUS,Z	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET
026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036	0661 CH 0662 0663 0664 0665 0666 0667	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE
026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10	0661 CH 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER
026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER
026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036	0661 CH 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER
0266 0266 0266 0266 0266 0266 0266	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800	0661 CH 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672 ; 0673 ;	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; /
026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672 ; 0673 ; 0674 CE	BTFSS RETLW SWAPP ANDLW BTFSS RETLW BCF MOVUW MOVUF RETLW K_DE_BOUNCE BTFSC	0 MIN_SEC,W B'000011111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP?
026 026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672 ; 0673 ; 0674 CE 0675	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER
026 026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0EOF A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET?
026 026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; / ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED
026 026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 0780 3 0A7F 4 0678	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676	BTFSS RETLW SWAPP ANDLW BTFSS RETLW BCF MOVUW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA?
026 026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676 0677 0678	BTFSS RETLW SWAPP ANDLW BTFSS RETLW BCF MOVUW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC GOTO	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; / ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED
026 026 026 026 026 026 026 026 026 026	7 0800 8 0396 9 0E0F 9 0E0F 8 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 07B0 3 0A7F 4 0678 5 0A86	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0673; 0674 CE 0675 0676 0677 0678 0679 0680 0681 CE	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVUW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSS GOTO BTFSC GOTO BTFSC GOTO	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON
026 026 026 026 026 026 026 026 026 027 027 027 027	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 07B0 3 0A7F 4 0678 5 0A86 6 05B7	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676 0677 0678 0679 0680 0681 CE	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG
026 026 026 026 026 026 026 026 026 027 027 027 027 027 027	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 0A76 2 0A76 4 0678 5 0A86 6 05B7 7 0215	0661 CE 0662 0663 0664 0665 0666 0667 0668 0667 0671 0672 0673 0674 CE 0675 0676 0677 0678 0679 0680 0681 CE 0682	BTFSS RETLW SWAMP ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC GOTO IK_DEB_1 BSF MOVF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W
026:026:026:026:026:026:026:026:026:026:	7 0800 8 0396 9 0EDF A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 07B0 3 0A7F 4 0678 5 0A86 6 05B7 7 0215 8 0643	0661 CE 0662 0663 0664 0665 0666 0667 0668 0667 0671 0672; 0673; 0674 CE 0675 0676 0677 0678 0679 0680 0681 CE 0683	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVUW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSC GOTO BTFSC GOTO IK_DEB_1 BSF MOVF BTFSC	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W STATUS,Z	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W ;NZ THEN SKIP
026: 026: 026: 026: 026: 026: 026: 027: 027: 027: 027: 027: 027: 027: 027	7 0800 8 0396 9 020F 9 020F 9 0800 0 0458 0 0C10 E 0036 F 0800 0 06B7 1 0A76 2 07B0 3 0A7F 4 0678 5 0A86 6 05B7 7 0215 8 0643 9 0C14	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676 0677 0678 0679 0680 0681 CE 0682 0683 0684	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVVW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC GOTO BTFSC GOTO BTFSC GOTO BTFSC MOVF BTFSC MOVF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W STATUS,Z D'20'	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W ;NZ THEN SKIP ;ELSE DB 100 mSEC
026:026:026:026:026:026:026:026:026:027:027:027:027:027:027:027:027:027:027	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 07B0 3 0A7F 4 0678 5 0A86 6 05B7 7 0215 8 0643 9 0C14 A 0035	0661 CE 0662 0663 0664 0665 0666 0667 0668 0669 0670 0671 0672; 0673; 0674 CE 0675 0676 0677 0678 0679 0680 0681 CE 0682 0683 0684 0685	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSS GOTO BTFSC GOTO IK_DEB_1 BSF MOVF BTFSC MOVLW MOVWF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W STATUS,Z D'20' DEBOUNCE	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W ;NZ THEN SKIP ;ELSE DB 100 mSEC ; /
026/ 026/ 026/ 026/ 026/ 026/ 026/ 027/ 027/ 027/ 027/ 027/ 027/ 027/ 027	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 D 0036 F 0800 0 06B7 1 0A76 2 0A76 2 0A76 3 0A7F 4 0678 5 0A86 6 05B7 7 0215 8 0643 9 0C14 A 0035 B 0405	0661 CE 0662 0663 0664 0665 0666 0667 0668 0667 0671 0672 0673 0674 CE 0675 0676 0677 0678 0679 0680 0681 0682 0683 0684 0685 0686	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC GOTO IK_DEB_1 BSF MOVF BTFSC MOVLW MOVWF BCF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W STATUS,Z D'20' DEBOUNCE PORT_A,BEP	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W ;NZ THEN SKIP ;ELSE DB 100 mSEC ; ; / ;TURN ON BEEPER
026'026'026'026'026'026'026'026'026'026'	7 0800 8 0396 9 0EDF A 0743 B 0800 C 0458 D 0C10 E 0036 F 0800 0 06B7 1 0A76 2 07B0 3 0A7F 4 0678 5 0A86 6 05B7 7 0215 8 0643 9 0C14 A 0035 B 0405 C 02F5	0661 CE 0662 0663 0664 0665 0666 0667 0668 0667 0671 0672 0673 0674 CE 0675 0676 0677 0678 0679 0680 0681 0681 0682 0683 0684 0685 0686	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVUW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSC GOTO BTFSC GOTO IK_DEB_1 BSF MOVF BTFSC MOVLW MOVUW MOVWF BCF BCF BCF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W STATUS,Z D'20' DEBOUNCE DORT_A,BEP DEBOUNCE	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W ;NZ THEN SKIP ;ELSE DB 100 mSEC ; ;TURN ON BEEPER ;DEC AND CHK
026'026'026'026'026'026'026'026'026'026'	7 0800 8 0396 9 0E0F A 0743 B 0800 C 0458 D 0C10 D 0036 F 0800 0 06B7 1 0A76 2 0A76 2 0A76 3 0A7F 4 0678 5 0A86 6 05B7 7 0215 8 0643 9 0C14 A 0035 B 0405	0661 CE 0662 0663 0664 0665 0666 0667 0668 0667 0671 0672 0673 0674 CE 0675 0676 0677 0678 0679 0680 0681 0682 0683 0684 0685 0686	BTFSS RETLW SWAPF ANDLW BTFSS RETLW BCF MOVLW MOVWF RETLW IK_DE_BOUNCE BTFSC GOTO BTFSS GOTO BTFSC GOTO IK_DEB_1 BSF MOVF BTFSC MOVLW MOVWF BCF	0 MIN_SEC,W B'00001111' STATUS,Z 0 ALFLAG,SILNC 10 MIN_SEC 0 ENTFLG,INKEYBEP CHK_DEB_1 FLAG,KEY_BEEP CHK_SERV ALFLAG,INAA CHK_BEP_ON ENTFLG,INKEYBEP DEBOUNCE,W STATUS,Z D'20' DEBOUNCE DOBOUNCE DOBOUNCE DOBOUNCE DOBOUNCE DOBOUNCE DOBOUNCE DEBOUNCE	;NO THEN SKIP ;GET MIN IN W ;MASK SECS ;ZERO? ;NO THEN RET ;RESET SILENCE ;SET I MIN TIMER ; ;IN KEY BEEP? ;YES THEN DEC TIMER ;KEY BEEP SET? ;NO, SEE IF SERVICED ;IN AA? ;YES THEN SEE IF ON ;SET FLAG ;GET IN W ;NZ THEN SKIP ;ELSE DB 100 mSEC ; ; / ;TURN ON BEEPER

027E	0505	0690		BSF	PORT_A,E	BEP	;TURN OFF BEEPER
			CHK_SERV		DDD01711	~	
		0692		CLRF	DEBOUNG		
0275	07F0	0693		BSF	PORT_A		CEDVICED WHEN OWID
	07F0 0A08	0694 0695			UP_TMR_1		;SERVICED THEN SKIP ;GO BACK
0281		0696		BCF			;ELSE CLEAR FLAGS
	04D0	0697					; /
0283		0698		BCF			; RESET FLAG
0284		0699					; /
0285		0700		GOTO			;GO BACK
		0701	;				
		0702	CHK_BEP_	_ON			
0286	0705	0703		BTFSS	PORT_A,	BEP	; IF OFF THEN SKIP
0287	0A08	0704		GOTO	UP_TMR_1	l	;ELSE WAIT
0288	0A76	0705		GOTO	CHK_DEB_	_1	;RETURN
		0706					
		0707					
			INC_HR		_		
	02A0	0709		INCF	F0		; INC HOUR TIMER
	0200	0710			F0,W		GET HR TMR IN W
028B	0031	0711 0712		MOVWF ANDLW		1111	;SAVE IN TEMP ;CHK LO BYTE = 10
	0F0A	0713		XORLW			; /
	0743	0714		BTFSS			;YES THEN SKIP
	0A93	0715		GOTO			;ELSE CHK 12
	0C10	0716		MOVLW			;LOAD 1 IN MSB
	0020	0717		MOVWF	F0		
0292		0718				AM PM	;RESTORE AM/PM
		0719	INC_AM_I				
0293	04E0	0720		BCF	F0,AM_PM	M.	;CLEAR AM/PM
0294	0200	0721		MOVF	F0,W		GET IN W
	0F12	0722		XORLW	12H		;SEE IF 12 HEX
	0743	0723		BTFSS			;YES THEN SKIP
	0A9D	0724			CHK_13		;ELSE CHK 13
	07F1	0725		BTFSS			; IF SET, SKIP
0299		0726			SET_AM_E		;ELSE SET
	04E0	0727		BCF	F0,AM_PN	41	CLEAR FLAG
029B	0800	0728	ODO AM I	RETLW	U		; RETURN
029C	05 0	0729	SET_AM_I	BSF	FO,AM PN	Л	;SET FLAG
0250	0310		CHK_13	DUI	10,7111_11	•	70DI IEMO
029D	0200	0732	OIII(_15	MOVF	F0.W		GET IN W
029E		0733		XORLW	13H		;SEE IF 13
029F	0743	0734		BTFSS	STATUS, 2	Z	;YES THEN SKIP
02A0	0AA3	0735		GOTO	RESTORE_	_AM_PM	
		0736	SET_1_H	З.			
	0C01	0737		MOVLW	B'000000	001'	;SET TO 1
02A2	0020	0738		MOVWF	F0		
			RESTORE_				
	06F1	0740		BTFSC	TEMP, AM_		;SKIP IF AM
02A4		0741		BSF	F0,AM_PN	4	;ELSE SET TO PM
02A5	0800	0742 0743		RETLW	0		
		0744					
		0744					
		0743	'	ORG	400		
		0748	;	Oito	100		
			KEY DE	FINITIONS	3		
000A		0750		ALARM_K		EQU	0A
000B		0751		CE_KEY		EQU	0в
000C		0752		SNOOZE_F		EQU	0C
000D		0753		AM_PM_K	EY	EQU	0D
000E		0754		CLR_ALAF	RM_KEY	EQU	0E
000F		0755		SET_KEY		EQU	OF
		0756					
			SERVICE_	_			
0400		0758				Y_HIT	
0401	0800	0759		RETLW	0		; RETURN

0402	06F0	0760	BTFSC	FLAG, SERVICED	; IF NOT SERVICED SKIP
0403		0761	RETLW	0	;ELSE RETURN
0404		0762	BSF	FLAG, SERVICED	;SET SERVICED FLAG
0405	0210	0763	MOVF		GET MODE OF OPERATION
0406	0E03	0764	ANDLW	B'00000011'	; /
0407	0643	0765	BTFSC	STATUS, Z	;00 THEN RTM
0408	0A10	0766	GOTO	RTMKS	RTM KEY SERVICE
0409	0031	0767	MOVWF	TEMP	;SAVE IN TEMP
040A	02F1	0768	DECFSZ	TEMP	; REDUCE TEMP
040B	0A0D	0769	GOTO	SK1	;SKIP
040C	0A1D	0770	GOTO	ATMKS	;01, DO ALARM MODE
		0771 SK1			
040D		0772	DECFSZ	TEMP	;REDUCE TEMP
040E		0773	RETLW	0	;11 THEN RETURN
040F	0A2A	0774	GOTO	DEMKS	;10, DATA ENTRY MODE
		0775 ;	THE MODE	MAN CARRITAN	
		0776 ; REAL T	IME MODE	KEY SERVICE	
0410	00DX	0777 RTMKS 0778	CALL	CHK_AL_KEYS	;CHK ALARM KEYS
0410		0779	IORLW		;SEE IF NZ RET
0411		0780	BTFSC		;NZ THEN SKIP
0413		0781	RETLW	0	;ELSE RETURN
0414		0782	MOVLW	-	;SEE IF SET KEY
0415		0783	XORWE	NEW KEY W	; /
0416		0784	BTFSC	STATUS, Z	;NO THEN SKIP
0417		0785	GOTO	SERV_SET_RTM	;SERVICE SET KEY
0418		0786	MOVLW	ALARM_KEY	;ALARM KEY?
0419	0193	0787	XORWF	NEW KEY,W	; /
041A	0643	0788	BTFSC		;NO THEN SKIP
041B	0AAB	0789	GOTO	SERV_ALARM_RTM	;ELSE SERVICE ALARM
		0790 IGNORE_	KEY		
041C	0800	0791	RETLW	0	;ELSE RETURN
		0792 ;			
		0793 ; ALARM '	FIME MOD	E KEY SERVICE	
		0794 ATMKS			
041D		0795	CALL		;CHECK ALRM KEYS
041E	0D00	0795 0796	IORLW	0	;CHECK IF 0
041E 041F	0D00 0643	0795 0796 0797	IORLW BTFSC	0 STATUS,Z	;CHECK IF 0 ;NZ THEN SKIP
041E 041F 0420	0D00 0643 0800	0795 0796 0797 0798	IORLW BTFSC RETLW	0 STATUS,Z 0	;CHECK IF 0 ;NZ THEN SKIP ;ELSE RETURN
041E 041F 0420 0421	0D00 0643 0800 0C0F	0795 0796 0797 0798 0799	IORLW BTFSC RETLW MOVLW	0 STATUS,Z 0 SET_KEY	CHECK IF 0 NZ THEN SKIP ELSE RETURN SEE IF SET KEY
041E 041F 0420 0421 0422	0D00 0643 0800 0C0F 0193	0795 0796 0797 0798 0799 0800	IORLW BTFSC RETLW MOVLW XORWF	0 STATUS,Z 0 SET_KEY NEW KEY,W	;CHECK IF 0 ;NZ THEN SKIP ;ELSE RETURN ;SEE IF SET KEY ; /
041E 041F 0420 0421 0422 0423	0D00 0643 0800 0C0F 0193 0643	0795 0796 0797 0798 0799 0800 0801	IORLW BTFSC RETLW MOVLW XORWF BTFSC	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z	CHECK IF 0 NZ THEN SKIP ELSE RETURN SEE IF SET KEY
041E 041F 0420 0421 0422	0D00 0643 0800 0C0F 0193 0643 0A9C	0795 0796 0797 0798 0799 0800	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A	0795 0796 0797 0798 0799 0800 0801 0802	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM ALARM_KEY	;CHECK IF 0 ;NZ THEN SKIP ;ELSE RETURN ;SEE IF SET KEY ; /
041E 041F 0420 0421 0422 0423 0424 0425	0D00 0643 0800 0COF 0193 0643 0A9C 0COA	0795 0796 0797 0798 0799 0800 0801 0802 0803	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM ALARM_KEY	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY
041E 041F 0420 0421 0422 0423 0424 0425 0426	0D00 0643 0600 0C0F 0193 0643 0A9C 0C0A 0193	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM ALARM_KEY NEW_KEY,W STATUS,Z SERV_ALARM_ATM	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643	0795 0796 0797 0798 0799 0800 0801 0802 0803 0803	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM ALARM_KEY NEW_KEY,W STATUS,Z SERV_ALARM_ATM	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM ALARM_KEY NEW_KEY,W STATUS,Z SERV_ALARM_ATM	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643	0795 0796 0797 0799 0799 0800 0801 0802 0803 0804 0805 0806 0807	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO	0 STATUS,Z 0 SET_KEY NEW_KEY,W STATUS,Z SERV_SET_ATM ALARM_KEY NEW_KEY,W STATUS,Z SERV_ALARM_ATM	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428	0D00 0643 0000 000F 0193 0643 0A9C 0C0A 0193 0643 0AA2	0795 0796 0797 0798 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT NO THEN SKIP ELSE SERVICE
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO OTTRY MODI	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429	0D00 0643 0800 0COF 0193 0643 0A9C 0COA 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS	IORLW BTFSC RETLW MOVUM XORWF BTFSC GOTO MOVUM XORWF BTFSC GOTO GOTO COTO CALL IORLW	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429	0D00 0643 0800 0COF 0193 0643 0A9C 0COA 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0807 0808 ; 0809 ;DATA EI 0810 0811	IORLW BTFSC RETLW MOVUM XORWF BTFSC GOTO MOVUM XORWF BTFSC GOTO GOTO CALL IORLW BTFSC	0 STATUS, Z 0 SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS 0 STATUS, Z	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHECK IF 0 INZ THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429	0D00 0643 0000 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO OTTEN CALL IORLW BTFSC RETLW	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O STATUS, Z O	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT NO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN
041E 041F 0420 0421 0422 0423 0424 0426 0427 0428 0429	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW SORWF BTFSC GOTO GOTO OTRY MODI CALL IORLW BTFSC RETLW MOVLW	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813 0814	IORLW BTFSC RETLW MOVUM XORWF BTFSC GOTO MOVUM XORWF BTFSC GOTO GOTO CALL IORLW BTFSC RETLW XORWF	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INZ THEN END
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 042E 042F 0430	0D00 0643 0800 0COF 0193 0643 0A9C 0COA 0193 0643 0AA2 0A1C	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0811 0812 0813 0814 0815	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO CALL IORLW BTFSC RETLW MOVLW XORWF BTFSC	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END IN THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042A 042B 042C 042D 042E 042F 0430 0431	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0800 0C0F 0193 0643 0801	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0811 0812 0813 0814 0815 0816 0817	IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO OTTEN CALL IORLW BTFSC RETLW MOVUW XORWF BTFSC RETLW MOVUW XORWF BTFSC RETLW MOVUW SORWF BTFSC GOTO	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END	CHECK IF 0 INZ THEN SKIP ELSE RETURN ISEE IF SET KEY INO THEN SKIP IGET ALARM KEY ISEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0426 0427 0428 0429 042B 042C 042D 042E 042F 0431 0431	0D00 0643 0000 000F 0193 0643 0A9C 000A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0800 0COF 0193 0643 0A03F 0COB	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813 0814 0815 0816 0817 0818	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW SORMF BTFSC GOTO GOTO CALL IORLW IORLW MOVLW XORWF BTFSC RETLW MOVLW XORWF BTFSC GOTO GOTO MOVLW	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY	CHECK IF 0 INZ THEN SKIP ELSE RETURN ISEE IF SET KEY INO THEN SKIP IGET ALARM KEY ISEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP IGOTO END IF CLEAR ENTRY
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 042F 0430 0431 0432 0433	0D00 0643 0840 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0D00 0643 0D00 0C0F 0193 0643 0A3F 0C0B	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813 0814 0815 0816 0817 0818	IORLW BTFSC RETLW MOVUM XORWF BTFSC GOTO MOVUM XORWF BTFSC GOTO GOTO CALL IORLW BTFSC RETLW XORWF BTFSC GOTO COLL IORLW BTFSC GOTO GOTO MOVUM XORWF BTFSC GOTO MOVUM XORWF	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INTO THEN SKIP GOTO END IF CLEAR ENTRY INO THEN SKIP
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 042F 0430 0431 0431	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0800 0C0F 0193 0643 0A3F 0C0B 0193	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO IORLW BTFSC RETLW MOVLW XORWF BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z STATUS, Z STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHECK ALARM KEYS CHECK ALARM KEYS ICHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP GOTO END IF CLEAR ENTRY IN SKIP IF NO
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 0430 0431 0432 0433 0434 0435	0D00 0643 0843 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0800 0C0F 0193 0643 0A3F 0C0B 0193 0643 0A48	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0811 0812 0813 0814 0815 0816 0817 0818 0819 0818 0819 0820	IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVUW XORWF BTFSC GOTO GOTO NTRY MODI CALL IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVUW XORWF BTFSC GOTO MOVUW XORWF BTFSC GOTO MOVUW XORWF BTFSC GOTO	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END_1	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT NO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP GOTO END IF CLEAR ENTRY ISKIP IF NO ABANDON ENTRY
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 0431 0431 0432 0433	0D00 0643 00643 0090 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0800 0C0F 0193 0643 0A3F 0C0B 0193 0643 0A3F 0C0B	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821	IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO OTTEN MODIO CALL IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO BTFSS	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END_1 ENTFLG, HR10	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHECK ALARM KEYS CHECK ALARM KEYS ICHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP GOTO END IF CLEAR ENTRY IN SKIP IF NO
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 042F 0430 0431 0432 0433 0434 0436 0437	0D00 0643 0840 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0D00 0643 0A3F 0C0F 0193 0643 0A3F 0C0B 0193 0643 0A3F 0C0B	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821 0822 0823	IORLW BTFSC RETLW MOVUM XORWF BTFSC GOTO MOVUM XORWF BTFSC GOTO CALL IORLW BTFSC RETLW XORWF BTFSC GOTO WOVUM XORWF BTFSC GOTO GOTO MOVUM XORWF BTFSC GOTO BTFSC GOTO GOTO MOVUM XORWF BTFSC GOTO GOTO	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END_1 ENTFLG, HR10 ENT_HR_10	CHECK IF 0 INZ THEN SKIP ELSE RETURN ISEE IF SET KEY INO THEN SKIP IGET ALARM KEY ISEE IF HIT INO THEN SKIP ICHECK ALARM KEYS ICHK IF 0 INZ THEN SKIP IELSE RETURN IF SET KEY THEN END INO THEN SKIP IGOTO END IF CLEAR ENTRY ISKIP IF NO IABANDON ENTRY IO'S HRS DONE?
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 0431 0431 0432 0433	0D00 0643 0800 0C0F 0193 0643 00A9C 0C0A 0193 0643 00A1C 09BA 0D00 0643 0800 0C0F 0193 0643 0800 0C0F 0193 0643 0A3F 0C0B 0193 0643 0A48 0737 0A54	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 DEMKS 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821	IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO OTTEN MODIO CALL IORLW BTFSC RETLW MOVUW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO BTFSS	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END_1 ENTFLG, HR10 ENT_HR_10	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INTO THEN SKIP GOTO END IF CLEAR ENTRY SKIP IF NO ABANDON ENTRY IO'S HRS DONE? NO THEN GET
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 0431 0431 0433 0434 0435 0436 0437 0438	0D00 0643 0800 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0B00 0C0F 0193 0643 0A3F 0C0B 0193 0643 0A48 0737 0A5F	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808; 0809 ;DATA EI 0812 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821 0822 0823 0824 0825	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO MOVLW BTFSC GOTO MOVLW BTFSC GOTO MOVLW BTFSC GOTO BTFSS GOTO BTFSS	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END_1 ENTFLG, HR10 ENTFLG, HR10 ENTFLG, HR ENT_HRS	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP CHECK ALARM KEYS CHECK ALARM KEYS CHECK ALARM KEYS CHECK ALARM KEYS ICHE IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP GOTO END IF CLEAR ENTRY IN SKIP IF NO ABANDON ENTRY IO'S HRS DONE? INO THEN GET INT THEN DONE?
041E 041F 0420 0421 0422 0423 0424 0425 0426 0427 0428 0429 042B 042C 042D 042E 0430 0431 0431 0435 0436 0437 0438 0438	0D00 0643 0643 0000 0C0F 0193 0643 0A9C 0C0A 0193 0643 0AA2 0A1C 09BA 0D00 0643 0800 0C0F 0193 0643 0A3F 0C0B 0193 0643 0A48 0737 0A54 0757 0A5F	0795 0796 0797 0798 0799 0800 0801 0802 0803 0804 0805 0806 0807 0808 ; 0809 ;DATA EI 0810 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821 0822 0823 0824	IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO MOVLW XORWF BTFSC GOTO GOTO WITHY MODI CALL IORLW BTFSC RETLW MOVLW XORWF BTFSC GOTO GOTO BTFSC GOTO BTFSS GOTO	O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z SERV_SET_ATM ALARM_KEY NEW_KEY, W STATUS, Z SERV_ALARM_ATM IGNORE_KEY E KEY SERVICE CHK_AL_KEYS O STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z O SET_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END CE_KEY NEW_KEY, W STATUS, Z DEMKS_END_1 ENTFLG, HR10 ENTFLG, HR10 ENTFLG, HR ENT_HRS	CHECK IF 0 INZ THEN SKIP ELSE RETURN SEE IF SET KEY INO THEN SKIP GET ALARM KEY SEE IF HIT INO THEN SKIP ELSE SERVICE CHECK ALARM KEYS CHK IF 0 INZ THEN SKIP ELSE RETURN IF SET KEY THEN END INO THEN SKIP GOTO END IF CLEAR ENTRY ISKIP IF NO ABANDON ENTRY INO THEN GET INO THEN GET INO THEN GET INO THEN GET

043C	0797	0829		BTFSS	ENTFLG, MIN	;MIN DONE?
	0A7F	0830				; NO THEN GET
	0A87	0831			_	
043E	UA67				ENI_AM_PM	; NO THEN GET
			DEMKS_EN			
	0717	0833		BTFSS	ENTFLG,RTATS	
0440	0A4D	0834		GOTO	LD_RTM	;LOAD IN TIME
0441	020E	0835		MOVF	MENTRY, W	;LD IN ALARM
		0836			MALARM	; /
	020F					. ,
		0837				<i>i</i> /
	002D	0838		MOVWF	HALARM	; /
0445	0450	0839			FLAG,ALRMLED	
0446	0618	0840		BTFSC	ALFLAG, ALONOF	;SEE IF ON-OFF
0447	0550	0841		BSF	FLAG,ALRMLED	;ELSE SET
			DEMKS_EN		•	
0448	0410	0843		BCF	FLAG,0	;RTM MODE
						; /
	0430	0844		BCF		
044A	0490	0845			FLAG,FLASH	STOP FLASH
		0846	SERV_COM	I_RET		
044B	05B0	0847		BSF	FLAG, KEY_BEEP	
044C	0800	0848		RETLW	0	; RETURN
		0849			-	
			LD_RTM			
044D	020E	0851		MOVF		;LD IN RTM
044E	002A	0852		MOVWF	MTMR	; /
044F	020F	0853		MOVF	HENTRY, W	; /
	002B	0854				; /
	0068	0855		CLRF		CLR TIME
	0069	0856				; /
0453	0A48	0857		GOTO	DEMKS_END_1	;GO BACK
		0858	;			
		0859	ENT_HR_1	LO		
0454	0213	0860		MOVF	NEW_KEY,W	;SEE IF 0
	0643	0861				;NZ THEN SKIP
		0862			•	;LOAD 0
	02D3	0863				;1 THE SKIP
0458	0A1C	0864		GOTO	IGNORE_KEY	;ELSE IGNORE KEY
0459	058F	0865		BSF	HENTRY, 4	;SET TO 1
045A	0537	0866		BSF	ENTFLG, HR10	;SET FLAG
045B	0A4B	0867		GOTO	SERV_COM_RET	GO GET NEXT
			LD_HENTE			
0.450	048F	0869		BCF	TIENTEDA A	;SET TO 0
					HENTRY, 4	73E1 10 0
	0537	0870			ENTFLG, HR10	
045E	0A4B	0871		GOTO	SERV_COM_RET	;
		0872	ENT_HRS			
045F	0C0F	0873		MOVLW	HENTRY	;USE INDIRECT ADDR.
0460	0024	0874		MOVWF	FSR	; /
	068F	0875				;SEE IF 0
	0A6D	0876				YES THEN 0,1&2
	0C0A	0877		MOVLW		;SEE IF 0 - 9
0464	0093	0878		SUBWF	NEW_KEY,W	; /
0465	0603	0879		BTFSC	STATUS,C	; IF C THEN SKIP
0466	0A1C	0880		GOTO	IGNORE_KEY	;ELSE IGNORE
		0881	ENT LO C			
0467	0557				ENTERIO LID	·CEE ELAC
0467	0557	0882		BSF	ENTFLG, HR	;SET FLAG
			ENT_LO_C			
0468	0200	0884		MOVF		;LD HRS
0469	0EF0	0885		ANDLW	B'11110000'	;MASK LO NIBL
046A	0113	0886		IORWF	NEW_KEY,W	OR NEW KEY
	0020	0887		MOVWF		;SAVE BACK
	0A4B	0888		GOTO		GET NEXT
0400	01710				OPK A CONTYET	, OLI MEAI
	0-00		ALLOW0_2			
	0C03	0890		MOVLW		;SEE IF 0 - 2
046E	0093	0891		SUBWF	NEW_KEY,W	<i>i</i> /
046F	0603	0892		BTFSC	STATUS, C	;<3 THEN SKIP
	0A1C	0893			IGNORE_KEY	
	0A67	0894				; /
04/1	0110 /			2010	TT4 T TTO COMIT	, ,
		0895				
			ENT_MIN_			
0472	0C0E	0897		MOVLW	MENTRY	;DO INDIRECT ADDR.

0.4=-					
0473	0024	0898	MOVWF	FSR	; /
	0C06	0899	MOVLW	D'6'	;ALLOW 0 - 5
	0093	0900	SUBWF	NEW_KEY,W	<i>;</i> /
	0603	0901	BTFSC	STATUS,C	; IF C THEN SKIP
0477	0A1C	0902	GOTO	IGNORE_KEY	;ELSE IGNORE
0478	0380	0903	SWAPF	FO,W	;SWAP AND GET
0479	0EF0	0904	ANDLW	B'11110000'	; MASK LO NIBL
	0113	0905	IORWF	NEW_KEY,W	OR NEW KEY
	0020	0906	MOVWF	F0	;SAVE BACK
047C	03A0	0907	SWAPF	F0	;SWAP BACK
047D	0577	0908	BSF	ENTFLG,MIN10	
047E	0A4B	0909	GOTO	SERV_COM_RET	GET NEXT
		0910 ;			
		0911 EI	NT MIN		
0475	OCOE	0912	MOVLW	MENTRY	;DO INDIRECT
	0024	0913	MOVWF	FSR	; /
0481	0C0A	0914	MOVLW	D'10'	;ALLOW 0 - 9
0482	0093	0915	SUBWF	NEW_KEY,W	;SEE IF >
0483	0603	0916	BTFSC	STATUS, C	;NO THEN SKIP
0484	0A1C	0917	GOTO	IGNORE_KEY	;ELSE IGNORE
	0597	0918	BSF	ENTFLG, MIN	;SET FLAG
0486	0A68	0919	GOTO	ENT_LO_COM	; /
		0920 ;			
		0921 EI	NT_AM_PM		
0487	0C0D	0922	MOVLW	AM_PM_KEY	;AM/PM KEY?
0488	0193	0923	XORWF	NEW KEY,W	; /
	0743	0924	BTFSS	STATUS, Z	;YES THEN SKIP
	0A1C	0925		IGNORE_KEY	, 120 111211 01121
			GOTO		
	07EF	0926	BTFSS	HENTRY, AM_PM	TEST BIT
048C	0A8F	0927	GOTO	SETAMPM	;ELSE SET
048D	04EF	0928	BCF	HENTRY,AM_PM	CLEAR FLAG
048E	0A4B	0929	GOTO	SERV_COM_RET	GOTO END
		0930 SI	ЕТАМРМ		
048F	05EF	0931	BSF	HENTRY, AM_PM	;SET FLAG
	0A4B	0932	GOTO	SERV_COM_RET	
0150	ULLE		0010	DBRV_CON_RB1	
		0933 ;			
		0934 ;			
		0934 ; 0935 ;	ERV_SET_RTM		
0491	020A	0934 ; 0935 ;	ERV_SET_RTM MOVF	MTMR, W	;TRANSFER TIME
		0934 ; 0935 ; 0936 SI 0937	MOVF		
0492	002E	0934 ; 0935 ; 0936 SI 0937 0938	MOVF MOVWF	MENTRY	;TO DATA ENTRY
0492 0493	002E 020B	0934 ; 0935 ; 0936 SE 0937 0938 0939	MOVF MOVWF MOVF	MENTRY HTMR,W	; TO DATA ENTRY
0492 0493	002E	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940	MOVF MOVWF MOVF MOVWF	MENTRY	;TO DATA ENTRY
0492 0493 0494	002E 020B 002F	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 0941 SI	MOVF MOVWF MOVF	MENTRY HTMR,W	;TO DATA ENTRY ; / ; /
0492 0493 0494 0495	002E 020B 002F	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942	MOVF MOVWF MOVF MOVWF	MENTRY HTMR, W HENTRY FLAG, W	;TO DATA ENTRY ; / ; / ;SAVE IN W
0492 0493 0494 0495	002E 020B 002F	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 0941 SI	MOVF MOVWF MOVF MOVWF ERV_COM	MENTRY HTMR,W HENTRY	;TO DATA ENTRY ; / ; /
0492 0493 0494 0495 0496	002E 020B 002F	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942	MOVF MOVWF MOVF MOVWF ERV_COM MOVF	MENTRY HTMR, W HENTRY FLAG, W	;TO DATA ENTRY ; / ; / ;SAVE IN W
0492 0493 0494 0495 0496 0497	002E 020B 002F 0210 0E01 0037	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944	MOVF MOVWF MOVF MOVWF ERV_COM MOVF ANDLW MOVWF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG	;TO DATA ENTRY ; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG
0492 0493 0494 0495 0496 0497 0498	002E 020B 002F 0210 0E01 0037 0CF2	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945	MOVF MOVWF MOVF MOVF FERV_COM MOVF ANDLW MOVWF MOVLW	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010'	;TO DATA ENTRY ; / ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S
0492 0493 0494 0495 0496 0497 0498 0499	002E 02DB 002F 0210 0E01 0037 0CF2 0130	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945	MOVF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; /
0492 0493 0494 0495 0496 0497 0498 0499	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945 0946 0947	MOVF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVUF MOVLW IORWF BCF	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0	;TO DATA ENTRY ; / ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S
0492 0493 0494 0495 0496 0497 0498 0499	002E 02DB 002F 0210 0E01 0037 0CF2 0130	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945 0946 0947	MOVF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; /
0492 0493 0494 0495 0496 0497 0498 0499	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0943 0944 0945 0946 0947 0948	MOVF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; /
0492 0493 0494 0495 0496 0497 0498 0499	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0943 0944 0945 0946 0947 0948	MOVF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVUF MOVLW IORWF BCF	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; /
0492 0493 0494 0495 0496 0497 0498 0499 049A 049B	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410	0934 ; 0935 ; 0937 0937 0938 0939 0940 0941 0942 0944 0945 0946 0947 0948 0949 ;	MOVF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; /
0492 0493 0494 0495 0496 0497 0498 0499 049A	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800	0934; 0935; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 0949; 0950 SI	MOVF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVUF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; / ; / ; /
0492 0493 0494 0495 0496 0497 0498 0499 049B	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945 0947 0948 0949 ; 0950 SI 0951	MOVF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0 0 MALARM,W MENTRY	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; / ; / ;TRANSFER ALARM ;TO DATA ENTRY
0492 0493 0494 0495 0496 0497 0498 0499 049B 049C 049C 049C	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800	0934 ; 0935 ; 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945 0946 0947 0948 0949 ; 0950 SI 0951 0952 0953	MOVF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0 0 MALARM,W MENTRY HALARM,W	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; / ; / ;TRANSFER ALARM ;TO DATA ENTRY ; /
0492 0493 0494 0495 0496 0497 0498 0499 049B 049C 049D 049F	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800	0934; 0935; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 0949; 0950 SI 0951 0953	MOVF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY	;TO DATA ENTRY; ; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; ; / ; ;TRANSFER ALARM ;TO DATA ENTRY ; ; / ; /
0492 0493 0494 0495 0496 0497 0498 0499 049B 049C 049D 049E 049F 04A0	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945 0947 0948 0949; 0950 SI 0951 0952 0953	MOVF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVUW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF MOVWF MOVWF MOVWF BSF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF	;TO DATA ENTRY; ;
0492 0493 0494 0495 0496 0497 0498 0499 049B 049C 049D 049E 049F 04A0	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800	0934; 0935; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 0949; 0950 SI 0951 0953	MOVF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF	;TO DATA ENTRY; ; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; ; / ; ;TRANSFER ALARM ;TO DATA ENTRY ; ; / ; /
0492 0493 0494 0495 0496 0497 0498 0499 049B 049C 049D 049E 049F 04A0	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518	0934; 0935; 0936 SI 0937 0938 0939 0940 0941 SI 0942 0943 0944 0945 0947 0948 0949; 0950 SI 0951 0952 0953	MOVF MOVWF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVUW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF BSF GOTO	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF	;TO DATA ENTRY; ;
0492 0493 0494 0495 0496 0497 0498 0499 049B 049C 049D 049E 049F 04A0	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 0941 SI 0944 0945 0947 0948 0949 ; 0950 SI 0951 0952 0953 0954 0957 ;	MOVF MOVWF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVUW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF BSF GOTO	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF	;TO DATA ENTRY; ;
0492 0493 0494 0495 0496 0497 0498 0498 0498 0498 049C 049D 049F 04A0 04A1	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 ; 0950 SI 0951 0953 0954 0955 G956 0957 ; 0958 SI	MOVF MOVWF MOVWF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF MOVWF BSF GOTO	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF SERV_COM	;TO DATA ENTRY; ; ; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
0492 0493 0494 0495 0496 0497 0498 049B 049C 049D 049E 049F 04A0 04A1	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934; 0935; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0945 0946 0947 0948 0949; 0950 SI 0951 0952 0953 0954 0955 0956 0957; 0958 SI	MOVF MOVWF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVUW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF SERV_COM	;TO DATA ENTRY; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
0492 0493 0494 0495 0496 0497 0498 0498 049C 049D 049E 049D 049E 049A	002E 020B 002F 0210 0E01 0037 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0941 SI 0942 0943 0944 0945 0947 0948 0949 ; 0950 SI 0951 0955 0956 0957 ; 0958 SI 0950	MOVF MOVWF MOVWF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0 0 MALARM,W MENTRY HALARM,W HENTRY HALARM,W HENTRY ALFLAG,ALONOF SERV_COM	;TO DATA ENTRY; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; ; ; ;TRANSFER ALARM ;TO DATA ENTRY; ; ;SET FLAG ;GOTO COMMON ;TEST ON/OFF ;SET ON/OF FLG
0492 0493 0494 0495 0496 0497 0498 049A 049B 049C 049D 049E 049D 04A1	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0949 0941 SI 0948 0944 0945 0946 0947 0948 0949 ; 0950 SI 0952 0953 0954 0955 0955 0955 0958 SI 0959 0960 0961	MOVF MOVWF MOVWF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0 0 MALARM,W MENTRY HALARM,W HENTRY HALARM,W HENTRY ALFLAG,ALONOF SERV_COM	;TO DATA ENTRY; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; ; ; ;TRANSFER ALARM ;TO DATA ENTRY; ; ;SET FLAG ;GOTO COMMON ;TEST ON/OFF ;SET ON/OF FLG
0492 0493 0494 0495 0496 0497 0498 049A 049B 049C 049D 049E 049D 04A1	002E 020B 002F 0210 0E01 0037 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 ; 0950 SI 0951 0953 0954 0955 0956 0957 ; 0958 SI 0959 0960 0961	MOVF MOVWF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO BCF GOTO	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF SERV_COM	;TO DATA ENTRY; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; ; ; ;TRANSFER ALARM ;TO DATA ENTRY; ; ;SET FLAG ;GOTO COMMON ;TEST ON/OFF ;SET ON/OF FLG
0492 0493 0494 0495 0496 0497 0498 049A 049B 049C 049D 049E 049D 04A1	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 ; 0950 SI 0951 0953 0954 0955 0956 0957 ; 0958 SI 0959 0960 0961	MOVF MOVWF MOVWF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0 0 MALARM,W MENTRY HALARM,W HENTRY HALARM,W HENTRY ALFLAG,ALONOF SERV_COM	;TO DATA ENTRY; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; ; ; ;TRANSFER ALARM ;TO DATA ENTRY; ; ;SET FLAG ;GOTO COMMON ;TEST ON/OFF ;SET ON/OF FLG
0492 0493 0494 0495 0496 0497 0498 049B 049C 049D 049D 04AD 04A1	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0946 0947 0948 ; 0950 SI 0951 0953 0954 0955 0956 0957 ; 0958 SI 0959 0960 0961	MOVF MOVWF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO BCF GOTO ET_ALONOF	MENTRY HTMR,W HENTRY FLAG,W B'00000001' ENTFLG B'11110010' FLAG FLAG,0 0 MALARM,W MENTRY HALARM,W HENTRY HALARM,W HENTRY ALFLAG,ALONOF SERV_COM	;TO DATA ENTRY; ; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
0492 0493 0494 0495 0496 0497 0498 049B 049C 049D 049D 04AD 04A1	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 0002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0947 0948 0949 ; 0950 SI 0951 0952 0953 0954 0955 G 0957 ; 0958 SI 0959 0960 0961 0962 0963 SI 0964	MOVF MOVWF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO BCF GOTO ET_ALONOF BSF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF SERV_COM ALFLAG, ALONOF SET_ALONOF SET_ALONOF SERV_ATM_COM	;TO DATA ENTRY; ; ; ; ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
0492 0493 0494 0495 0496 0497 0498 0498 0499 0494 0495 0491 0401 04A1 04A2 04A3 04A4	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 002F 0518 0A95	0934 ; 0935 ; 0936 S 0939 0940 0941 Si 0948 0945 0946 0947 0948 0949 ; 0955 0956 0957 ; 0958 Si 0956 0957 ; 0958 Si 0956 Si 0961 0962 Si	MOVF MOVWF MOVWF MOVF MOVF ERV_COM MOVF ANDLW MOVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO BCF GOTO ET_ALONOF BSF ERV_ATM_COM	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF SERV_COM ALFLAG, ALONOF SET_ALONOF SERV_ATM_COM ALFLAG, ALONOF	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; ; / ; / ; TRANSFER ALARM ;TO DATA ENTRY; ; / ;SET FLAG ;GOTO COMMON ;TEST ON/OFF ;SET ON/OF FLG ;CLEAR FLAG ;RET THRO COM ;SET FLAG
0492 0493 0494 0495 0496 0497 0498 0498 0499 0494 0495 0491 0401 04A1 04A2 04A3 04A4	002E 020B 002F 0210 0E01 0037 0CF2 0130 0410 0800 020C 002E 020D 0002F 0518 0A95	0934 ; 0935 ; 0936 SI 0937 0938 0939 0940 SI 0942 0943 0944 0945 0947 0948 0949 ; 0950 SI 0951 0952 0953 0954 0955 G 0957 ; 0958 SI 0959 0960 0961 0962 0963 SI 0964	MOVF MOVWF MOVWF MOVWF MOVWF ERV_COM MOVF ANDLW MOVVWF MOVLW IORWF BCF RETLW ERV_SET_ATM MOVF MOVWF MOVWF MOVWF MOVWF MOVWF BSF GOTO ERV_ALARM_ATM BTFSS GOTO BCF GOTO ET_ALONOF BSF	MENTRY HTMR, W HENTRY FLAG, W B'00000001' ENTFLG B'11110010' FLAG FLAG, 0 0 MALARM, W MENTRY HALARM, W HENTRY ALFLAG, ALONOF SERV_COM ALFLAG, ALONOF SET_ALONOF SET_ALONOF SERV_ATM_COM	;TO DATA ENTRY; ; / ;SAVE IN W ;ATM OR RTM MODE? ;SAVE IN ENTFLG ;FORCE 1S; ; / ; / ; TRANSFER ALARM ;TO DATA ENTRY; ; / ;SET FLAG ;GOTO COMMON ;TEST ON/OFF ;SET ON/OF FLG ;CLEAR FLAG ;RET THRO COM ;SET FLAG

04A8 0CF0 0967 MOVLW B'11110000' ;CLEAR 04A9 0176 0968 ANDWF MIN_SEC ; 04AA 0800 0969 RETLW 0 ;RETURU	
	SEC COUNT
חמות מער	/
OTAN OOOO OOOO KEILW O KEIOO	N
0970 ;	
0971 SERV_ALARM_RTM	
	EEP FLAG
	O ALARM TIME
04AD 0430 0974 BCF FLAG,1 ;	
	5 IN MIN_SEC
04AF 0036 0976 MOVWF MIN_SEC ;	/
04B0 0800 0977 RETLW 0	
0978 ; 0979 SERV_SNOOZE	
	E FOR 10 MINS
04B1 0CR0 0500 MOVEW 0R0 75N002.	
04B3 0558 0982 BSF ALFLAG, SILNC ; SET F.	
0983 CLR AL COM	2.10
04B4 05B0 0984 BSF FLAG.KEY BEEP ;SET B	EEP FLAG
04B5 007A 0985 CLRF AATMR :RESET	AA TIMER
	AA FLAGS
	INAA FLAG
04B8 0505 0988 BSF PORT_A,BEP ;TURN (OFF BEEPER
04B9 0800 0989 RETLW 0 ;RET	
0990 ;	
0991 CHK_AL_KEYS	
04BA 0718 0992 BTFSS ALFLAG,ALONOF ;ALARM	
04BB 0801 0993 RETLW 1 ;NO TH	EN RET
04BC 0738 0994 BTFSS ALFLAG, INAL ; IN AL	
04BD 0801 0995 RETLW 1 ;NO TH	EN SKIP
04BE 0C0E 0996 MOVLW CLR_ALARM_KEY ; CHECK	
04BF 0193 0997 XORWF NEW_KEY,W ;	
04C0 0643 0998 BTFSC STATUS,Z ;NO TH	
	CLEAR ALARM F SNOOZE HIT
04C2 0C0C 1000 MOVLW SNOOZE_KEY ; SEE I	
	/
04C3 0193 1001 XORWF NEW_KEY,W ;	
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES THE STATUS (STATUS)	
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES THOUS, THOU	
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TY 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE	
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TS 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005 ;	
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES THOUS TO STATUS, Z 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE	HEN SKIP
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005 ; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR	HEN SKIP
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005 ; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR	HEN SKIP ALARM SILENCE
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TH 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005 ; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR	HEN SKIP ALARM SILENCE MINS
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TS 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005 ; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR	HEN SKIP ALARM SILENCE MINS
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CB 0AB4 1011 GOTO CLR_AL_COM 1012;	HEN SKIP ALARM SILENCE MINS
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012 ; 1013 ORG 600	HEN SKIP ALARM SILENCE MINS /
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TS 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04C9 0C0F 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this row	HEN SKIP ALARM SILENCE MINS /
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this row 1015 ;the timing in sounding the alarm.	HEN SKIP ALARM SILENCE MINS /
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014;If the AA alarm is set, then this row 1015;the timing in sounding the alarm.	HEN SKIP ALARM SILENCE MINS /
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,SILNL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014;If the AA alarm is set, then this row 1015; the timing in sounding the alarm. 1016; 1017 SOUND_AA	ALARM SILENCE MINS / tine takes care of
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014;If the AA alarm is set, then this row 1015; the timing in sounding the alarm. 1016; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP	HEN SKIP ALARM SILENCE MINS / tine takes care of
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this row 1015 ;the timing in sounding the alarm. 1016 ; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP ; 0601 0800 1019 RETLW 0 ;ELSE I	HEN SKIP ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014;If the AA alarm is set, then this row 1015;the timing in sounding the alarm. 1016; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP: 0601 0800 1019 RETLW 0 ;ELSE 1000000000000000000000000000000000000	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this row 1015 ;the timing in sounding the alarm. 1016 ; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP : 0601 0800 1019 RETLW 0 ;ELSE 10603 0800 1021 RETLW 0 ;ELSE 10603 0800 ;ELSE 10603 0800 1021 RETLW 0 ;ELSE 10605 0800 0800 090 ;ELSE 10605 0800 090 090 ;ELSE 10605 0800 090 090 ;ELSE 10605 0800 090 090 090 ;ELSE 10605 0800 090 090 090 090 090 090 090 090 09	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this row 1015 ;the timing in sounding the alarm. 1016; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP : 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP : 0601 0800 1019 RETLW 0 ;ELSE 1 0603 0800 1021 RETLW 0 ;ELSE 1 0604 06B7 1022 BTFSC ENTFLG,INKEYBEP ;SKIP :	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04C9 0C0F 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this rou 1015 ;the timing in sounding the alarm. 1016 ; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP : 0601 0800 1019 RETLW 0 ;ELSE 1000	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04CA 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012; 1013 ORG 600 1014 ;If the AA alarm is set, then this row 1015 ;the timing in sounding the alarm. 1016 ; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP : 0601 0800 1019 RETLW 0 ;ELSE 1 0602 0658 1020 BTFSC ALFLAG,SILNC ;SKIP : 0603 0800 1021 RETLW 0 ;ELSE 1 0604 06B7 1022 BTFSC ENTFLG,INKEYBEP ;SKIP : 0605 0A55 1023 GOTO CHK_COLSN ;CHK COLSN 1024 SND_AA_0 0606 0778 1025 BTFSS ALFLAG,INAA ;SKIP :	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP
04C3 0193 1001 XORWF NEW_KEY,W ; 04C4 0743 1002 BTFSS STATUS,Z ;YES TO 04C5 0801 1003 RETLW 1 04C6 0AB1 1004 GOTO SERV_SNOOZE 1005; 1006 CLR_ALARM 04C7 0438 1007 BCF ALFLAG,INAL ;CLEAR 04C8 0458 1008 BCF ALFLAG,SILNC ;CLEAR 04C9 0C0F 1009 MOVLW B'00001111' ;CLEAR 04C4 0176 1010 ANDWF MIN_SEC ; 04CB 0AB4 1011 GOTO CLR_AL_COM 1012 ; 1013 ORG 600 1014 ;If the AA alarm is set, then this row 1015 ;the timing in sounding the alarm. 1016 ; 1017 SOUND_AA 0600 0738 1018 BTFSS ALFLAG,INAL ;SKIP : 0601 0800 1019 RETLW 0 ;ELSE 1 0602 0658 1020 BTFSC ALFLAG,SILNC ;SKIP : 0604 06B7 1022 BTFSC ENTFLG,INKEYBEP ;SKIP : 0605 0A55 1023 GOTO CHK_COLSN ;CHK COLON 0606 0778 1025 BTFSS ALFLAG,INAA ;SKIP : 0607 0778 1025 BTFSS ALFLAG,INAA ;SKIP : 077 078 078 079 CHK_COLSN ;CHK COLON 078 079 079 CHK_COLSN ;CHK COLON 079 079 079 079 079 079 079 079 079 079	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL IF DONE
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL IF DONE RST CYCL
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL IF DONE RST CYCL IF DONE
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL IF DONE RST CYCL IF DONE 2ND CYCLE
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL IF DONE RST CYCL IF DONE 2ND CYCLE IF DONE
04C3 0193	ALARM SILENCE MINS / tine takes care of IF IN ALRM RETURN IF NOT IN SIL RET IF NOT IN KEY BEP OLLISION IF IN AA ALL IF DONE RST CYCL IF DONE 2ND CYCLE IF DONE DO 3RD CYCLE IF DONE IF DONE

0610	0799	1036	BTFSS	AAFLAG,4	;SKIP IF DONE
0611	0A3E	1037	GOTO	DO_CYCL4	;DO CYCLE 5
0612	07B9	1038	BTFSS	AAFLAG,5	;SKIP IF DONE
0613	0A43	1039	GOTO	DO_CYCL5	;DO CYCLE 6
	07D9	1040	BTFSS	AAFLAG,6	;SKIP IF DONE
	0A48	1041	GOTO	DO_CYCL6	;DO CYCLE 6
	07F9	1042	BTFSS	AAFLAG,7	;SKIP IF DONE
	0A50	1043	GOTO	DO_CYCL7	;DO CYCLE 7
0618	0A07	1044	GOTO	SND_AA_1	GO BACK
		1045			
0619	0079	1046	INIT_AA CLRF	AAFLAG	;CLEAR ALL FLAGS
	0578	1047	BSF	ALFLAG, INAA	;SET IN AA FLAG
	0A2D	1049	GOTO	PUT_ON_100	ON 100 MSECS
		1050			
		1051	DEC_AA_TMR		
061C	00FA	1052	DECF	AATMR	;REDUCE TIMER
061D	021A	1053	MOVF	AATMR,W	GET IN W
061E	0743	1054	BTFSS	STATUS, Z	;CHECK IF Z
	0801	1055	RETLW	1	; NO THEN NZ
0620	0800	1056	RETLW	0	;ELSE 0
		1057			
0.601	0016		DO_CYCLO	DEG 33 MMD	.DEDUGE STAD
	091C 0743	1059 1060	CALL BTFSS	DEC_AA_TMR STATUS,Z	;REDUCE TIMER ;IF NZ THEN RET
	0800	1061	RETLW	•	/IF NZ IREN KEI
	0519	1062	BSF	AAFLAG,0	;SET DONE FLAG
			PUT OFF 100	,-	
0625	0505	1064	BSF	PORT_A,BEP	TURN OFF BEEPER
	0C14	1065	MOVLW		FOR 100 MSECS
0627	003A	1066	MOVWF	AATMR	; /
0628	0800	1067	RETLW	0	
		1068			
			DO_CYCL1		
	091C	1070	CALL	DEC_AA_TMR	;REDUCE TIMER
	0743	1071	BTFSS	•	; IF NZ THEN RET
	0800 0539	1072 1073	RETLW BSF	0 AAFLAG,1	;SET DONE FLAG
002C	0339		PUT_ON_100	AAFLAG,I	/SEI DONE FLAG
062D	0405	1075	BCF	PORT_A,BEP	TURN ON BEEPER
	0C14	1076	MOVLW	D'20'	FOR 100 MSECS
062F	003A	1077	MOVWF	AATMR	; /
0630	0800	1078	RETLW	0	
		1079	;		
		1080	DO_CYCL2		
	091C	1081	CALL	DEC_AA_TMR	;REDUCE TIMER
	0743	1082	BTFSS	•	; IF NZ THEN RET
	0800	1083	RETLW	0	; / / / / / / / / / / / / / / / / / / /
	0559 0505	1084 1085	BSF BSF	AAFLAG,2 PORT_A,BEP	;SET DONE FLAG ;TURN OFF BEEPER
	0C64	1086	MOVLW		;FOR 500 MSECS
	003A	1087	MOVWF		; /
	0800	1088	RETLW		, ,
		1089			
		1090	DO_CYCL3		
0639	091C	1091	CALL	DEC_AA_TMR	; REDUCE TIMER
063A	0743	1092	BTFSS	STATUS, Z	; IF NZ THEN RET
	0800	1093	RETLW	0	; /
	0579	1094	BSF	AAFLAG,3	;SET DONE FLAG ;DO NEXT CYCLE
063D	0A2D	1095		PUT_ON_100	;DO NEXT CYCLE
		1096			
0625	091C	1097	DO_CYCL4 CALL	DEC_AA_TMR	;REDUCE TIMER
	0743	1098		STATUS,Z	; IF NZ THEN RET
	0800	1100			; /
	0599	1101		AAFLAG,4	;SET DONE FLAG
	0A25	1102			; DO NEXT CYCLE
		1103			
		1104	DO_CYCL5		

0643 091C 0644 0743	1105 1106	CALL	DEC_AA_TMR STATUS,Z	;REDUCE TIMER ;IF NZ THEN RET				
0645 0800	1106	BILSS	0					
0646 05B9	1108	BSF	0 AAFLAG,5 PUT_ON_100	;SET DONE FLAG				
0647 0A2D	1109	GOTO	PUT_ON_100	;DO NEXT CYCLE				
	1110 ;							
	1111 DO_CYCI	16						
0648 091C			DEC_AA_TMR					
0649 0743	1113	BTFSS	STATUS, Z	; IF NZ THEN RET				
064A 0800	1114	RETLW	O AAFLAG,6 PORT_A,BEP D'200' AATMR	; /				
064B 05D9 064C 0505	1115 1116	BOF	DODT A DED	;TURN OFF BEEPER				
064D 0CC8	1117	MOVIW	D'200'	FOR 1000 MSECS				
064E 003A	1118	MOVWF	AATMR	; /				
064F 0800	1119	RETLW	0					
	1120 ;							
	1121 DO_CYCI	٦7						
0650 091C	1122	CALL		;REDUCE TIMER				
0651 0743	1123	BTFSS	STATUS, Z	; IF NZ THEN RET				
0652 0800	1124	RETLW	0 AAFLAG,7 PUT_ON_100	; /				
0653 05F9 0654 0A2D	1125	COTO	AAFLAG,/	SET DONE FLAG				
0654 UAZD	1126 1127 ;	GOIO	PU1_ON_100	,DO NEAT CICLE				
	1128 CHK_COI	SN						
0655 0605	1129	BTESC	PORT A, BEP	; IF ON THEN SKIP				
0656 0A06	1130	GOTO	SND_AA_0	;ELSE RET				
0657 021A	1131	MOVF	SND_AA_0 AATMR,W STATUS,Z LD_AAT_1 AATMR	GET TIMER				
0658 0643	1132	BTFSC	STATUS, Z	;NZ THEN SKIP				
	1133	GOTO	LD_AAT_1	;LOAD A 1 IN TMR;REDUCE TIMER				
065A 00FA	1134	DECF	AATMR					
065B 0800	1135	RETLW	0	; RETURN				
065C 02BA	1136 LD_AAT_ 1137	_I NCE	AATMR	·INC TIMED				
065D 0800	1138	RETLW	0	;INC TIMER ;RET				
0032 0000	1139 ;	1121211	· ·	,1121				
	1140	ORG	PIC57					
	1141 SYS_RES							
07FF 0A00	1142	GOTO	START					
	1143 ;							
		END						
	1145							
	1146 1147							
	1148							
	1110							
MEMORY USAGE MAP ('X	<pre>(' = Used, '-</pre>	' = Unus	sed)					
0000 : XXXXXXXXXXXXX								
0040 : XXXXXXXXXXXX	(XXX XXXXXXXX	XXXXXXX	XXXXXXXXXXXXXXX	XXXXXXXXXXXXXXX				
0080 : XXXXXXXXXXX	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,	vvvvvvvvvvvvvvv	vvvvvvvvvvvvvvv				
00C0 : XXXXXXXXXXXXXX								
UUCU : AAAAAAAAAAAA	NAA AAAAAAAA	MANAAAA	AAAAAAAAAAAAAA	AAAAAAAAAAAAA				
0100 : xxxxxxxxxxxx xxxxxxxx								
0140: ——————————————								
0200 : XXXXXXXXXXXXX	XXXX XXXXXXXXX	XXXXXXX	$\tt XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX$	XXXXXXXXXXXXXX				
0240 : XXXXXXXXXXXXX	XXXX XXXXXXXX	XXXXXXX	xxxxxxxxxxxxxxxx	XXXXXXXXXXXXXXX				
0280 : XXXXXXXXXXXXXX	XXXX XXXXXXXX	XXXXXXX	xxxxxx					
02C0 :								
0400 : xxxxxxxxxxxx								
O TO O - WWWWWWWWWWW	, , , , , , , , , ,	XXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX				
0440 : XXXXXXXXXXXXX				XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX				
0440 : XXXXXXXXXXXXX								
0440 : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXX XXXXXXXX	XXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX				
	xxxxxxxxx 	XXXXXXX	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX				

			XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		xxxxxxxxxxxx				
All other memory blocks unused.									
Errors Warnings		0							

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