

32160a series sample program

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;LCD CONTROLLER:SED1520*2
A0 EQU P1.0
R_W EQU P1.4
E1 EQU P1.1
E2 EQU P1.2
E3 EQU P1.3
RES EQU P1.6

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ORG 0000H
    JMP BEGIN
    ;ORG 000BH
    ;JMP TIMER_0
BEGIN: ;MOV SP,#5FH
    ;SETB EA
    ;SETB ETO
    ;SETB ET1
    ;MOV TH0,#01FH
    ;MOV TLO,#0ECH
    ; MOV TH1,#000H
    ; MOV TL1,#000H
    ;MOV TMOD,#10H
    ;SETB CL
    ;CLR TR1
    ;SETB TRO

START: CLR RES ;RST
    ;lcall delay
    lcall delay
    lcall delay
    SETB RES
    lcall delay
    lcall delay
    lcall delay
    lcall delay
    MOV A,#0E2H ;SOFTWARE RST
    LCALL WCOM1
    LCALL WCOM2
    lcall wcom3
    LCALL DELAY
    MOV A,#10101001B ;SELECT DUTY=1/32
    LCALL WCOM1
    LCALL WCOM2
    LCALL WCOM3
    MOV A,#10100000B ;SETB ADC,SEG0-SEG61,COM0-COM31
    LCALL WCOM1
    LCALL WCOM2
    LCALL WCOM3
    MOV A,#10100100B ;SETB STATIC DRIVE OFF(NORMAL DRIVEING)
    LCALL WCOM1
    LCALL WCOM2
    LCALL WCOM3
    MOV A,#11000000B ;INTIAL DISPLAY LINE
    LCALL WCOM1
    LCALL WCOM2
    LCALL WCOM3
    MOV A,#10101111B ;DISPLAY ON
    LCALL WCOM1
    LCALL WCOM2
    LCALL WCOM3
    ;wait:jmp wait

    MOV R4,#000H
    MOV R3,#018H ;TEST1
    LCALL TEST
    LCALL TEST0
    LCALL DELAY2
    ;LCALL FULL

    ;MOV A,#11000000B ;INITIAL DISPLAY LINE
    ;LCALL WCOM1
    ;LCALL WCOM2
    ; LCALL TEST2 ;TEST2
    ;LCALL DELAY2

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;wait:jmp wait

;MOV A,#11000000B ;INITIAL DISPLAY LINE
;LCALL WCOM1
;LCALL WCOM2
MOV R4,#001H
MOV R3,#00H ;TSET3
LCALL TEST
LCALL TEST0
LCALL DELAY2

;MOV A,#11000000B ;INITIAL DISPLAY LINE
;LCALL WCOM1
;LCALL WCOM2
MOV R4,#000H
MOV R3,#08H ;TEST4
LCALL TEST
LCALL TEST0
LCALL DELAY2

;MOV A,#11000000B ;INITIAL DISPLAY LINE
;LCALL WCOM1
;LCALL WCOM2
;LCALL TEST5
;mov R3,#010H
;LCALL TEST
;LCALL TEST0 ;TEST5
;LCALL TEST6
;LCALL DELAY2

;MOV A,#11000000B ;INITIAL DISPLAY LINE
;LCALL WCOM1
;LCALL WCOM2
; MOV R3,#10H
; LCALL TEST ;CLEAR RAM
;MOV A,#11000000B ;INITIAL DISPLAY LINE
;LCALL WCOM1
;LCALL WCOM2
; MOV R4,#00000000B
; MOV DPTR,#DOG2
; LCALL TEST6_1 ;TEST6
; MOV R4,#00000000B
; MOV DPTR,#DOG2
; LCALL TEST6_2
; LCALL DELAY2

MOV A,#10101110B ;DISPLAY OFF(TEST7)
LCALL WCOM1
LCALL WCOM2
LCALL WCOM3
LCALL DELAY2

LJMP START
;TIMER_0: CPL CL
;CLR TR0
;MOV TH0,#01FH
;MOV TL0,#0ECH
;SETB TR0
;RETI

TEST:
DISP2: MOV R2,#0B8H
MOV A,R2 ;set page address
;LCALL WCOM1
LCALL WCOM2
LCALL WCOM3
MOV A,#00H ;set column address
LCALL WCOM1
lcall wcom2
;MOV A,R4
LCALL WCOM3

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;lcall wcom3
DISP1: MOV R1,#8 ;set (8*8)*16characters
      MOV DPTR,#CHAR

DISP0: MOV R0,#08H
      MOV A,R3
      MOVC A,@A+DPTR
      ;LCALL WDATA1
      LCALL WDATA2
      LCALL WDATA3
      INC DPTR
      DJNZ R0,DISP0
      DJNZ R1,DISP1
      INC R2
      CJNE R2,#0BCH,DISP2
      RET

TEST0:
DISP02: MOV R2,#08H
        MOV A,R2 ;set page address
        LCALL WCOM1
        ;LCALL WCOM2
        ;LCALL WCOM3
        MOV A,#00H ;set column address
        LCALL WCOM1
        ;lcall wcom2
        ;MOV A,R4
        ;LCALL WCOM3
        ;lcall wcom3
DISP01: MOV R1,#10 ;set (8*8)*16characters
        MOV DPTR,#CHAR

DISP00: MOV R0,#08H
        MOV A,R3
        MOVC A,@A+DPTR
        LCALL WDATA1
        ;LCALL WDATA2
        ;LCALL WDATA3
        INC DPTR
        DJNZ R0,DISP00
        DJNZ R1,DISP01
        INC R2
        CJNE R2,#0BCH,DISP02
        RET

TEST6: MOV A,#10111000B
      MOV R4,A
      MOV R3,#2
      TEST6_4:
        MOV DPTR,#CHAR1
        MOV R2,#2

TEST6_5: MOV A,R4
        LCALL WCOM1
        LCALL WCOM2
        LCALL WCOM3
        MOV A,#00000000B
        LCALL WCOM1
        LCALL WCOM2
        LCALL WCOM3
        MOV R1,#40
      TEST6_1:MOV A,#0
        MOVC A,@A+DPTR
        LCALL WDATA2
        INC DPTR
        DJNZ R1,TEST6_1
        MOV R1,#80
      TEST6_2:MOV A,#0
        MOVC A,@A+DPTR
        LCALL WDATA1
        INC DPTR
        DJNZ R1,TEST6_2
        MOV R1,#40
      TEST6_3:MOV A,#0
        MOVC A,@A+DPTR

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LCALL WDATA3
INC DPTR
DJNZ R1,TEST6_3
INC R4
DJNZ R2,TEST6_5
DJNZ R3,TEST6_4
RET

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DELAY: MOV     40H,#032H      ;10.05ms
DEL1:  MOV     41H,#030H
DEL2:  DJNZ   41H,DEL2      ;192us
      DJNZ   40H,DEL1
      RET

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```

DELAY2: MOV    R1,#15
DEL21:  MOV    R2,#250
DEL22:  MOV    R3,#200
DEL23:  DJNZ  R3,DEL23
      DJNZ  R2,DEL22
      DJNZ  R1,DEL21
      RET

```

```

WCOM1:
  CLR A0
  CLR R_W
  NOP
  MOV P0,A
  NOP
  nop
  SETB E1
  ;SETB E2
  ;SETB E3
  NOP
  nop
  CLR E1
  nop
  ;CLR E2
  ;CLR E3
  RET
WCOM2:
  CLR A0
  CLR R_W
  NOP
  MOV P0,A
  NOP
  SETB E2
  ;SETB E2
  ;SETB E3
  NOP
  nop
  CLR E2
  nop
  ;CLR E2
  ;CLR E3
  RET
WCOM3:
  CLR A0
  CLR R_W
  NOP
  MOV P0,A
  NOP
  nop
  SETB E3
  ;SETB E2
  ;SETB E3
  NOP
  CLR E3
  nop
  ;CLR E2
  ;CLR E3
  RET
WDATA1:
  SETB A0
  CLR R_W
  NOP
  MOV P0,A
  NOP

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SETB E1
NOP
nop
CLR E1
NOP
RET
WDATA2:
SETB A0
CLR R_W
NOP
MOV PO,A
NOP
nop
SETB E2
NOP
CLR E2
NOP
RET
WDATA3:
SETB A0
CLR R_W
NOP
MOV PO,A
NOP
nop
SETB E3
NOP
CLR E3
NOP
RET
CHAR:
DB      080H,040H,020H,010H,008H,004H,002H,001H
DB      0AAH,0AAH,0AAH,0AAH,0AAH,0AAH,0AAH,0AAH
DB      000H,000H,000H,000H,000H,000H,000H,000H
DB      0FFH,0FFH,0FFH,0FFH,0FFH,0FFH,0FFH,0FFH
CHAR1:
DB      000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H
DB      000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H
DB      000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,002H,002H,0FEH,0FEH,002H,002H
DB      002H,002H,006H,00EH,0FCH,0F8H,000H,000H,040H,0CCH,0ECH,000H,000H,0C0H,0E0H,0A0H
DB      0A0H,060H,000H,000H,040H,0C0H,0E0H,040H,020H,060H,0E0H,0C0H,000H,000H,002H,0FEH
DB      0FFH,000H,000H,000H,040H,020H,020H,0E0H,0C0H,000H,020H,060H,0E0H,0A0H,000H,000H
DB      0A0H,060H,020H,020H,0F8H,0FCH,020H,020H,000H,0C0H,0C0H,020H,020H,0E0H,0C0H,000H
DB      080H,0C0H,020H,020H,020H,0E0H,000H,000H,002H,0FEH,0FFH,040H,020H,020H,0E0H,0C0H
DB      000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H
DB      000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H
DB      000H,000H,000H,000H,000H,000H,000H,000H,001H,001H,001H,001H,001H,001H,001H,001H
DB      001H,001H,000H,000H,000H,000H,000H,000H,000H,000H,000H,008H,00FH,00FH,008H,008H
DB      008H,008H,004H,006H,003H,000H,000H,000H,008H,00FH,00FH,008H,000H,00DH,009H,009H
DB      00FH,007H,000H,000H,080H,0FFH,0FFH,088H,008H,00CH,007H,003H,000H,000H,008H,00FH
DB      00FH,008H,000H,00EH,00EH,009H,009H,00FH,00FH,008H,0C0H,080H,083H,04FH,03EH,00EH
DB      001H,000H,000H,000H,00FH,00FH,008H,008H,000H,007H,00FH,00DH,009H,009H,001H,000H
DB      007H,00FH,00CH,008H,008H,008H,000H,000H,008H,00FH,00FH,008H,000H,000H,00FH,00FH
DB      008H,000H,000H,000H,000H,001H,001H,001H,001H,001H,001H,001H,001H,001H,001H,001H,001H
DB      001H,001H,001H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H,000H
END

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