

;FUNCTION: 106X56 DOTS DISPLAY (KS0724)

;EXPLAIN: SID-----P3.0

; SCLK----P3.1

; RS-----P3.2 1=DISPLAY DATA 0=CONTROL DATA

; /RESET---P3.5

; INT1-----P3.3

; /CS1B-----P3.4

; R1=PAGE NO.

; R2=COLOUM NO.

; R3=DATA

;

ORG 0000H

LJMP MAIN

ORG 0013H

LJMP I1SP

ORG 0030H

MAIN: MOV R3,#00000111B; REFERENCE VOLTAGE REGISTER

MOV SP,#60H

SETB EA

CLR EX1

SETB PX1

CLR IT1

BBB: SETB P3.4

SETB P3.2

SETB P3.1

SETB P3.5

LCALL DELAY

CLR P3.5

LCALL DELAY

LCALL DELAY

LCALL DELAY

SETB P3.5

LCALL DELAY

CLR P3.4

CLR P3.1

;

MOV A,#10100000B; ADC SELECT (S0-S129)

LCALL WCMD

LCALL DELAY

MOV A,#10100010B; SET BIAS=1/9

LCALL WCMD

LCALL DELAY

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        MOV A,#11001111B;  COM SCAN DIRECTION(C0-C63)
        LCALL WCMD
        LCALL DELAY
        MOV A,#00101100B;  POWER CONTROL1
        LCALL WCMD
        LCALL DELAY
    LCALL DELAY
    MOV A,#00101110B;  POWER CONTROL2
        LCALL WCMD
        LCALL DELAY
    LCALL DELAY
        MOV A,#00101111B;  POWER CONTROL3
        LCALL WCMD
        LCALL DELAY
    LCALL DELAY
        MOV A,#00100110B;  REGULATOR RESISOR SELECT R0-2
        LCALL WCMD
        LCALL DELAY
        LCALL DELAY
        MOV A,#10000001B;  |-- SET REFERENCE VOLTAGE MODE
        LCALL WCMD;      |
        LCALL DELAY; <----|
        LCALL DELAY;      |
        MOV A,#00001100B ; |-- SET REFERENCE VOLTAGE REGISTER
        LCALL WCMD
        LCALL DELAY
        LCALL DELAY

        MOV A,#10100100B;  ENTIRE DISPLAY OFF
        LCALL WCMD
        LCALL DELAY
        MOV A,#10100110B;  REVERSE DISPLAY OFF
        LCALL WCMD
        LCALL DELAY

    LL: MOV A,#10110000B;  PAGE 0
        LCALL WCMD
        LCALL DELAY
        MOV A,#01000000B;  INITIAL START LINE
        LCALL WCMD
        LCALL DELAY
        MOV A,#00010000B;  SET COLUMN ADDR (H)
        LCALL WCMD
        LCALL DELAY
        MOV A,#00000000B;  SET COLUMN ADDR (L)
        LCALL WCMD

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```

        LCALL DELAY
        LCALL DELAY

        MOV A,#10101111B;  DISPLAY ON
        LCALL WCMD
        LCALL DELAY

FF:     MOV R6,#00001111B
        LCALL DISP0
        SETB EX1
        LCALL DELYL
        CLR EX1
;
;
        MOV R6,#11110000B
        LCALL DISP0
        SETB EX1
        LCALL DELYL
        CLR EX1
;
        MOV R6,#01010101B
        LCALL DISP1
        SETB EX1
        LCALL DELYL
        CLR EX1

;
        LCALL DISP2
        SETB EX1
        LCALL DELYL
        CLR EX1

        MOV R6,#11111111B
        LCALL DISP3
        SETB EX1
        LCALL DELYL
        CLR EX1

        LJMP FF
;MAIN END
DISP0:

        MOV R1,#0B0H;      R1--PAGE NO. 0
REX0:  MOV A,R1

```

```

    LCALL WCMD
    MOV A,#10H;
    LCALL WCMD ;
        MOV R2,#00H;      COLOUM 0
    MOV A,R2 ;
    LCALL WCMD ;      R2--COLUMN NO.
        MOV R0,#04H;      R0--TESSELLATED AMOUNT
REY0: MOV A,R6
    LCALL WDAT;      DISPLAY 1 COLUMN
    INC R2
    DJNZ R0,NEXTCL
    MOV R0,#04H;
    MOV A,R6 ;
    CPL A ;      CPL R6
    MOV R6,A ;
NEXTCL: NOP
    CJNE R2,#80H,REY0;  128 COLOUMN
    INC R1
    CJNE R1,#0B9H,REX0;  PAGE 8

```

RET

DISP1:

```

        MOV R1,#0B0H ;      R1--PAGE NO. 0
REX1:  MOV A,R1
    LCALL WCMD

    MOV A,#10H;
    LCALL WCMD ;
        MOV R2,#00H;      COLOUM 10
    MOV A,R2 ;
    LCALL WCMD ;      R2--COLUMN NO.

        MOV R0,#01H;      R0--TESSELLATED AMOUNT
REY1:  MOV A,R6
    LCALL WDAT;      DISPLAY 1 COLUMN
    INC R2
    DJNZ R0,NEXT1
    MOV R0,#01H;
    MOV A,R6 ;
    CPL A ;      CPL R6
    MOV R6,A ;
NEXT1:  NOP
    CJNE R2,#80H,REY1;  128 COLOUMN

```

INC R1
CJNE R1,#0B9H,REX1; PAGE 8

RET

DISP2: MOV A,#01000000B; INITIAL START LINE=0
LCALL WCMD

MOV A,#00010000B; SET COLUMN ADDR (H)
LCALL WCMD

MOV A,#00000000B; SET COLUMN ADDR (L)
LCALL WCMD
MOV R1,#0B0H; R1--PAGE NO. 0

MOV A,R1
LCALL WCMD
MOV R2,#00H; COLOUM 0
MOV A,R2
LCALL WCMD
MOV DPTR,#M3
REY5: MOV A,R2
MOVC A,@A+DPTR
LCALL WDAT
INC R2
CJNE R2,#80H,REY5
INC R1

REX11: MOV A,R1
LCALL WCMD
MOV R2,#00H; COLOUM 0
MOV A,R2;
LCALL WCMD; R2--COLUMN NO.
MOV DPTR,#M1

REY11: MOV A,R2
MOVC A,@A+DPTR
LCALL WDAT
INC R2
CJNE R2,#80H,REY11
INC R1

CJNE R1,#0B4H,REX11; DISPLAY PAGES
REX2: MOV A,R1
LCALL WCMD
MOV R2,#00H; COLOUM 0
MOV A,R2;

```

        LCALL WCMD ;      R2--COLUMN NO.
        MOV DPTR,#M2
REY2: MOV A,R2
        MOVC A,@A+DPTR
        LCALL WDAT
        INC R2
        CJNE R2,#80H,REY2
        INC R1
        CJNE R1,#0B7H,REX2; DISPLAY PAGES

```

```

        MOV A,R1
        LCALL WCMD
        MOV R2,#00H;      COLOUM 0
        MOV A,R2 ;
        LCALL WCMD ;      R2--COLUMN NO.
        MOV DPTR,#M4
REY3: MOV A,R2
        MOVC A,@A+DPTR
        LCALL WDAT
        INC R2
        CJNE R2,#80H,REY3
        INC R1

```

```

        MOV A,R1
        LCALL WCMD
        MOV R2,#00H;      COLOUM 0
        MOV A,R2 ;
        LCALL WCMD ;      R2--COLUMN NO.
REY4: MOV A,#0FFH
        LCALL WDAT
        INC R2
        CJNE R2,#80H,REY4

```

```

RET

```

DISP3:

```

        MOV R1,#0B0H ;      R1--PAGE NO. 0
REX3: MOV A,R1
        LCALL WCMD

        MOV A,#10H;
        LCALL WCMD ;
        MOV R2,#00H;      COLOUM 0
        MOV A,R2 ;

```

```

        LCALL WCMD ;      R2--COLUMN NO.

REY33:   MOV A,R6
        LCALL WDAT;      DISPLAY 1 COLUMN

        INC R2
        CJNE R2,#80H,REY33; 131 COLOUMN
INC R1
CJNE R1,#0B9H,REX3;  PAGE 8


RET


;
;*****SEND DISP DATA  INPUT:
R1,DPTR
;


I1SP:   PUSH ACC
        MOV A,R5
        PUSH ACC
        MOV A,R6
        PUSH ACC
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        LCALL DELAY
        INC R3
        MOV A,#10000001B; |--- SET REFERENCE VOLTAGE MODE
        LCALL WCMD;      |
        MOV A,R3;      |--- SET REFERENCE VOLTAGE REGISTER
        LCALL WCMD
        CJNE R3,#00100000B,SP1
        MOV R3,#00001000B

SP1:

```

```
    POP ACC
    MOV R6,A
    POP ACC
    MOV R5,A
    POP ACC
    RETI
```

;

```
WCMD:  MOV R4,#08H
        CLR P3.2
        CLR C
    LAP1: RLC A
        JC STC1
    STC0: CLR P3.0
        SJMP LP1
    STC1: SETB P3.0
        SJMP LP1
    LP1: SETB P3.1
```

```
        CLR P3.1
        DJNZ R4,LAP1
```

```
    RET
```

```
WDAT:  MOV R4,#08H
        SETB P3.2
        CLR C
    LAP2: RLC A
        JC STD1
    STD0: CLR P3.0
        SJMP LP2
    STD1: SETB P3.0
        SJMP LP2
    LP2: SETB P3.1
```

```
        CLR P3.1
        DJNZ R4,LAP2
```

```
    RET
```

;

;

```
;DELAY 0.01mS SUBPROGRAM
```

```
DELAY: MOV R5,#02H
```



```
DELY1:    DJNZ R5,DELY1
          RET
```

```
;DELYS:DELAY 0.125S SUBPROGRAM
;DELYL:DELAY 0.5S SUBPROGRAM
```

```
DELYL: MOV R5,#0AH
DELY4: MOV R6,#0FfH
DELY5: MOV R7,#5FH
DELY6: DJNZ R7,DELY6
        DJNZ R6,DELY5
        DJNZ R5,DELY4
        RET
```

```
;
DELY: MOV R5,#9FH
DELY7: MOV R6,#0FFH
DELY8: DJNZ R6,DELY8
        DJNZ R5,DELY7
        RET
```

```
;
```

```
ORG 0300H
M1: DB 0FFH,00H,00H,00H,00h,00h,00h,00h
     DB 01H,01H,7FH,01H,01H,00H,00H,00H ;T
     DB 00H,41H,7FH,41H,00H,00H,00H,00H ;I
     DB 7EH,11H,11H,11H,7EH,00H,00H,00H ;A
     DB 7FH,04H,08H,10H,7FH,00H,00H,00H ;N
     DB 7FH,02H,04H,02H,7FH,00H,00H,00H ;M
     DB 7EH,11H,11H,11H,7EH,00H,00H,00H ;A
     DB 00H,00H,00H,00H,00H,00H,00H,00H
     DB 3EH,41H,41H,41H,22H,00H,00H,00H ;C
     DB 3EH,41H,41H,41H,3EH,00H,00H,00H ;O
     DB 3EH,41H,49H,49H,78H,00H,00H,00H ;G
     DB 00H,00H,00H,00H,00H,00H,00H,00H
     DB 7FH,40H,40H,40H,40H,00H,00H,00H ;L
     DB 3EH,41H,41H,41H,22H,00H,00H,00H ;C
     DB 7FH,41H,41H,22H,1CH,00H,00H,00H ;D
     DB 00H,00H,00H,00H,00H,00H,00H,0ffH
```

M2: DB 0FFH,00H,00H,00H,00H, 00H, 00H, 00H
DB 00H,00H,00H,00H
DB 00H,42H,7FH,40H,00H,00H,00H ;1
DB 00H,00H,00H,00H
DB 42H,61H,51H,49H,46H,00H,00H,00H ;2
DB 00H,00H,00H,00H
DB 36H,49H,49H,49H,36H,00H,00H,00H ;8
DB 00H,00H,00H,00H
DB 22H,14H,08H,14H,22H,00H,00H,00H ;X
DB 00H,00H,00H,00H
DB 3CH,4AH,49H,49H,30H,00H,00H,00H ;6
DB 00H,00H,00H,00H
DB 18H,14H,12H,7FH,10H,00H,00H,00H ;4
DB 00H,00H,00H,00H,00H,00H,00H,00H
DB 7FH,41H,41H,22H,1CH,00H,00H,00H ;D
DB 3EH,41H,41H,41H,3EH,00H,00H,00H ;O
DB 01H,01H,7FH,01H,01H,00H,00H,00H ;T
DB 46H,49H,49H,49H,31H,00H,00H,00H ;S
DB 00H,00H,00H,00H,00H,00H,00H,0FFH

M3: DB 0FFH,01H,01H,01H,01h, 01h, 01h, 01h
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,01H
DB 01H,01H,01H,01H,01H,01H,01H,0FFH

M4: DB 0FFH,80H,80H,80H, 80h, 80h, 80h ,80h
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H

DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H
DB 80H,80H,80H,80H,80H,80H,80H,80H

DB 80H,80H,80H,80H,80H,80H,80H,0ffH

END

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