

;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 IISP

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

```

LCALL DELAY  
LCALL DELAY

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

FF: MOV R6,#00001111B  
LCALL DISPO  
SETB EX1  
LCALL DELYL  
CLR EX1

;  
;

MOV R6,#11110000B  
LCALL DISPO  
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  
DISPO:

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
MOV 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
MOV 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
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,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

