```
;FUNCTION: 10064 DOTS DISPLAY(NT7502) TEST PROGRAM
;EXPLAIN: E-------P3.0 ENABLE=1
; R/W-----P3.1 "H" READ DATA "L" WRITE DATA TO IC
; A0------P3.2 1=DISPLAY DATA 0=CONTROL DATA
; CS1-----P3.3 WHEN CS1="L" CHIP BECOMES ACTIVE
; RES-----P3.4 WHEN RES="L" RESET OPERATION IS PERFORMED
; D0~D7---P1.0~P1.7 8-bit DATA BUS
; R1=PAGE NO.
; R2=COLOUM NO.
      ORG 0000H
      AJMP MAIN
      ORG 0030H
MAIN:       CLR P3.3
            SETB P3.4
      ;INITIALIZE
            CLR P3.4
            LCALL DE
            SETB P3.4
            LCALL DELAY ;RESET
            CLR P3.0
            MOV A,#00101111B; SELECT TO USE ONLY THE INTERNAL POWER SUPLY
            LCALL WCMD
            MOV A,#10101110B; DISPAY Off
            LCALL WCMD
            MOV A,#10100000B; SELECT ADC=0
            LCALL WCMD
            MOV A,#11001111B; SELECT SCAN DIRECTION D=1 C65--C0
            LCALL WCMD
            MOV A,#00100011B; REGULATOR V0 SELECT Iref=3
            LCALL WCMD ;
            LCALL DE
            MOV A,#10000001B;
            LCALL WCMD ;
            LCALL DE
            MOV A,#00110111B; a=55
            LCALL WCMD ;
            LCALL DE
            MOV A,#10110000B; PAGE 0
            LCALL WCMD
            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

AAA:        MOV A,#10100110B
            LCALL WCMD; NOMAL DISPLAY
            MOV A,#10100100B
            LCALL WCMD; ENTIRE DISPLAY OFF
            MOV A,#10101111B; DISPAY ON
            LCALL WCMD
            LCALL DISP1
            LCALL DELAYL
            MOV R6,#01010101B; R6---DISPLAY DATA
            LCALL DISP2
            LCALL DELAYL
```

```
            MOV R6,#00001111B; R6---DISPLAY DATA
            LCALL DISP0
            LCALL DELAYL
            MOV A,#10100111B
            LCALL WCMD; REVERSES THE DISPLAY
            LCALL DELAYL
            MOV A,#10100101B
            LCALL WCMD; ENTIRE DISPLAY ON
            LCALL DELAYL
            SJMP AAA
            ;MAIN END
      ; DISPLAY1 SUBPROGRAM

DISP1:            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,#84H,REY5
            INC R1

REX1:             MOV A,R1
            LCALL WCMD
            MOV R2,#00H; COLOUM 0
            MOV A,R2 ;
            LCALL WCMD ; R2--COLUMN NO.
            MOV DPTR,#M1

REY1:             MOV A,R2
            MOVC A,@A+DPTR
            LCALL WDAT
            INC R2
            CJNE R2,#84H,REY1
            INC R1
            CJNE R1,#0B4H,REX1; 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,#84H,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,#84H,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,#84H,REY4
            RET
;
;DIPLAY0 SUBPROGRAM

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,#84H,REY0; 131 COLOUMN
            MOV A,R6;
            CPL A ; CPL R6
```

```
            MOV R6,A;
            INC R1
            CJNE R1,#0B9H,REX0; PAGE 8
            RET

DISP2:      MOV R1,#0B0H ; R1--PAGE NO. 0

REX00:            MOV A,R1
            LCALL WCMD
            MOV A,#10H;
            LCALL WCMD ;
            MOV R2,#00H; COLOUM 0
            MOV A,R2 ;
            LCALL WCMD ; R2--COLUMN NO.

REY00:            MOV A,R6
            LCALL WDAT; DISPLAY 1 COLUMN
            INC R2
            MOV A,R6 ;
            CPL A ; CPL R6
            MOV R6,A ;

NEXTC:            NOP
            CJNE R2,#84H,REY00; 131 COLOUMN
            MOV A,R6;
            INC R1
            CJNE R1,#0B9H,REX00; PAGE 8
            RET

; WRITE COMMAND SUBPROGRAM

WCMD:             MOV P1,A
            CLR P3.2
            CLR P3.1
            SETB P3.0
            LCALL DELAY
            CLR P3.0
            LCALL DELAY
            RET
; WRITE DISPLAY DATA SUBPROGRAM

WDAT:             MOV P1,A
            SETB P3.2
            CLR P3.1
            SETB P3.0
            LCALL DY1
            CLR P3.0
            LCALL DY1
            RET

DY1:        MOV R5,#06H

DY2:        DJNZ R5,DY2
            RET

;DELAY 0.01mS SUBPROGRAM
```

```
DELAY:            MOV R5,#0FH

DELY1:            DJNZ R5,DELY1
            RET

;DELYS:DELAY 0.125S SUBPROGRAM
;DELAYL:DELAY 0.5S SUBPROGRAM

DELAYL:     MOV R5,#0AH

DELYS:            MOV R6,#0FFH

DELY2:            MOV R7,#0FFH

DELY3:            DJNZ R7,DELY3
            DJNZ R6,DELY2
            DJNZ R5,DELYS
            RET

DE:         MOV R6,#0FFH

DE1:        MOV R7,#0FFH

DE2:        DJNZ R7,DE2
            DJNZ R6,DE1
            RET

;DIPLAY SUBPROGRAM1

      ORG 0300H

M1:   DB 0FFH,0FFH,00H,00H,00H,00H,00H,00H
      DB 00H,00H,00H,00H,00H,00H,00H,00H
      DB 00H,00H,00H,00H,00H,00H,00H,00H
      DB 01H,01H,7FH,01H,01H,00H,00H,00H ;T
      DB 7FH,02H,04H,02H,7FH,00H,00H,00H ;M
      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,00H
      DB 00H,00H,00H,00H,00H,00H,00H,00H
      DB 00H,00H,00H,00H,00H,00H,00H,00H
      DB 00H,00H,0FFH,0FFH

M2:   DB 0FFH,0FFH,00H,00H,00H,00H,00H,00H
      DB 00H,00H,00H,00H,00H,00H,00H,00H
      DB 00H,00H,00H,00H,00H,00H,00H,00H
      DB 00H,00H,42H,7FH,40H,00H,00H,00H ;1
      DB 21H,41H,45H,4BH,31H,00H,00H,00H ;3
      DB 42H,61H,51H,49H,46H,00H,00H,00H ;2
      DB 22H,14H,08H,14H,22H,00H,00H,00H ;X
      DB 3CH,4AH,49H,49H,30H,00H,00H,00H ;6
```

```
        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 00H,00H,00H,00H,00H,00H,00H,00H
        DB 00H,00H,00H,00H,00H,00H,00H,00H
        DB 00H,00H,00H,00H,00H,00H,00H,00H
        DB 00H,00H,0FFH,0FFH

M3:     DB 0FFH,0FFH,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,03H,03H,03H,03H,03H,03H
        DB 03H,03H,0FFH,0FFH

M4:     DB 0FFH,0FFH,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H,0C0H
        DB 0C0H,0C0H,0FFH,0FFH
END
```