

带 LCD 驱动 MCU 在显示方面的软件设计

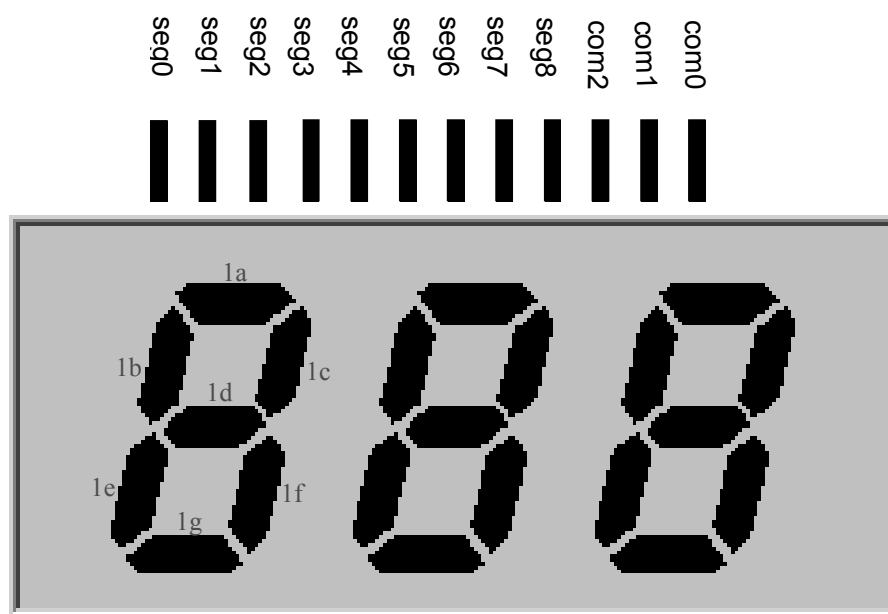
文件编码：HA0106S

介绍：

本文以简单例程介绍了带 LCD 驱动 MCU 在显示方面的软件设计，适用于所有带 LCD 驱动功能的 HOLTEK MCU。该例程以 A/D with LCD 型芯片 HT46R62 为母体，驱动三位七段码的 LCD 屏（如下图）做显示，以每秒递加方式循环显示 000~999。

应用说明：

1. LCD 屏及与 MCU 连接引脚：



2. LCD 显示段码与 MCU 显存对应关系：

	seg0	seg1	seg2	seg3	seg4	seg5	seg6	seg7	seg8
	40H	41H	42H	43H	44H	45H	46H	47H	48H
com0	1e	1f		2e	2f		3e	3f	
com1	1d	1c		2d	2c		3d	3c	
com2	1b	1a	1g	2b	2a	2g	3b	3a	3g

3. 本范例同时提供配合 HOLTEK LCD 仿真器的液晶面板文件 LcdDemo.lcd 及 LCD 各段码图案，以方便调试及应用。

程序清单:

```

;*****
;FILE NAME:      LCD DEMO
;MCU:            HT46R62
;MASK OPTION:    WDT: DISABLE
;
;                LCD DUTY: 1/3
;                LCD BIAS: 1/2
;                LCD BIAS TYPE: C
;                SYSVOLT: 5.0V
;                SYSFRAG: 4000KHZ
;AUTHOR:         RADOME
;HISTORY:        2006.01.20
;*****
include Ht46r62.inc
include Micro.inc
;*****
lcd_data        .section 'data'
;*****
acc_bk          db      ?
status_bk       db      ?
msecond         db      ?
number1         db      ?
number2         db      ?
number3         db      ?
display_temp    db      ?
f_display       dbit
;*****
lcd_code        .section 'code'
;*****
                org     0000h
                jmp     init

                org     000ch
timer_int:                                ; 8ms
                push
                inc     msecond
                mov     a,msecond
                sub     a,125                ; 8ms*125=1s
                snz     c
                jmp     timer_end
                clr     msecond
                set     f_display
timer_end:
    
```

```

        pop
        reti
;*****
;Initializers
;*****
init:
    clr     wdt
    clr     intc0
    clr     intc1
    clr     rtcc

    clr     msecond
    clr     number1
    clr     number2
    clr     number3

    mov     a,00001001b
    mov     intc0,a
    mov     a,6                ;8ms
    mov     tmr,a
    mov     a,10010111b
    mov     tmrc,a
;*****
;Display
;*****
display:
    snz     f_display
    jmp     display
    clr     f_display

    inc     number3
    mov     a,number3
    sub     a,10
    snz     c
    jmp     display_next
    clr     number3

    inc     number2
    mov     a,number2
    sub     a,10
    snz     c
    jmp     display_next
    clr     number2
    
```

```
    inc    number1
    mov    a,number1
    sub    a,10
    snz    c
    jmp    display_next
    clr    number1

display_next:
    set    bp.0
    mov    a,40h
    mov    mp1,a
display_number1:
    mov    a,number1
    add    a,number_table
    mov    tblp,a
    tabrdl display_temp
    rl    display_temp
    rl    display_temp
    rl    display_temp
    mov    a,display_temp
    mov    iar1,a
    inc    mp1
    rl    display_temp
    rl    display_temp
    rl    display_temp
    mov    a,display_temp
    mov    iar1,a
    inc    mp1
    rl    display_temp
    rl    display_temp
    rl    display_temp
    mov    a,display_temp
    mov    iar1,a
    inc    mp1
display_number2:
    mov    a,number2
    add    a,number_table
    mov    tblp,a
    tabrdl display_temp
    rl    display_temp
    rl    display_temp
    rl    display_temp
    mov    a,display_temp
    mov    iar1,a
```

```

        inc     mp1
        rl     display_temp
        rl     display_temp
        rl     display_temp
        mov    a,display_temp
        mov    iar1,a
        inc     mp1
        rl     display_temp
        rl     display_temp
        rl     display_temp
        mov    a,display_temp
        mov    iar1,a
        inc     mp1
display_number3:
        mov    a,number3
        add    a,number_table
        mov    tblp,a
        tabrdl display_temp
        rl     display_temp
        rl     display_temp
        rl     display_temp
        mov    a,display_temp
        mov    iar1,a
        inc     mp1
        rl     display_temp
        rl     display_temp
        rl     display_temp
        mov    a,display_temp
        mov    iar1,a
        inc     mp1
        rl     display_temp
        rl     display_temp
        rl     display_temp
        mov    a,display_temp
        mov    iar1,a
        clr    bp.0
        jmp    display
;*****
;Table
;*****
        org    0700h
number_table:
        ;      bdeacfg0
        dw    10111110b      ;"0"
    
```

```
dw      00001100b      ;"1"  
dw      01111010b      ;"2"  
dw      01011110b      ;"3"  
dw      11001100b      ;"4"  
dw      11010110b      ;"5"  
dw      11110110b      ;"6"  
dw      00011100b      ;"7"  
dw      11111110b      ;"8"  
dw      11011110b      ;"9"  
;*****  
end
```