

chapter14

1. 访问CMOS RAM

code

```
1  assume cs:code,ds:data,ss:stack
2
3  stack segment
4      db 128 dup(0)
5  stack ends
6
7  data segment
8      db 'YY/MM/DD hh:mm:ss',0
9  data ends
10
11
12 code segment
13
14 TIME_CMOS: db 9,8,7,4,2,0
15
16 start:
17     mov ax,stack
18     mov ss,ax
19     mov sp,128
20
21     call clear_screen
22     call show_init
23     stime:
24     call show_time
25     jmp stime
26     mov ax,4c00h
27     int 21h
28
29 ;=====
30 show_time:
31     push ax
32     push bx
33     push cx
34     push dx
35     push ds
36     push es
37     push si
38     push di
39     show_time_bg:
40         mov ax,0b800h
41         mov es,ax
42         mov di,16*160
43
44         mov ax,cs
45         mov ds,ax
46         mov si,offset TIME_CMOS
```

```

47
48     mov cx,6
49     s1:
50         push cx
51
52         mov al,ds:[si]
53         out 70h,al
54         in al,71h
55
56         mov ah,al
57         mov cl,4
58         shr ah,cl
59         and al,00001111b
60
61         add ah,30h
62         add al,30h
63
64         mov byte ptr es:[di],ah
65         mov byte ptr es:[di+2],al
66
67         inc si
68         add di,6
69
70         pop cx
71         loop s1
72
73     show_time_end:
74         pop di
75         pop si
76         pop es
77         pop ds
78         pop dx
79         pop cx
80         pop bx
81         pop ax
82         ret
83     ;=====
84     show_init:
85         push ax
86         push bx
87         push cx
88         push dx
89         push ds
90         push es
91         push si
92         push di
93     show_init_bg:
94         mov ax,data
95         mov ds,ax
96         mov si,0
97
98         mov ax,0b800h
99         mov es,ax
100        mov di,16*160
101
102        s:
103        mov al,ds:[si]
104        cmp al,0

```

```

105         je show_init_end
106         mov ah,2
107         mov es:[di],ax
108         inc si
109         inc di
110         inc di
111         jmp s
112 show_init_end:
113     pop di
114     pop si
115     pop es
116     pop ds
117     pop dx
118     pop cx
119     pop bx
120     pop ax
121     ret
122 ;=====
123 clear_screen:
124     push ax
125     push bx
126     push cx
127     push dx
128     push ds
129     push es
130     push si
131     push di
132 clear_screen_bg:
133     mov bx,0b800h
134     mov es,bx
135
136     mov bx,0
137     mov dl,0
138     mov dh,00000010b
139     mov cx,2000
140
141 clearScreen:
142     mov es:[bx],dx
143     add bx,2
144
145     loop clearScreen
146
147 clear_screen_end:
148     pop di
149     pop si
150     pop es
151     pop ds
152     pop dx
153     pop cx
154     pop bx
155     pop ax
156     ret
157 code ends
158 end start

```

截屏

