```
 1                          AREA        main, CODE, READONLY, CODE
 2                          THUMB
 3
 4   TIMER1_CFG             EQU 0x40031000
 5   TIMER1_TAMR            EQU 0x40031004
 6   TIMER1_CTL             EQU 0x4003100C
 7   TIMER1_IMR             EQU 0x40031018
 8   TIMER1_RIS             EQU 0x4003101C ; Timer Interrupt Status
 9   TIMER1_ICR             EQU 0x40031024 ; Timer Interrupt Clear
10   TIMER1_TAILR           EQU 0x40031028 ; Timer interval
11   TIMER1_TAMATCHR        EQU 0x40031030
12   TIMER1_TAPR            EQU 0x40031038
13   TIMER1_TAR             EQU 0x40031048 ; Timer register
14
15   SYSCTL_RCGCGPIO        EQU 0x400FE608 ; GPIO Gate Control
16   SYSCTL_RCGCTIMER       EQU 0x400FE604 ; GPTM Gate Control
17
18                          EXPORT  ex_timer
19
20   ex_timer              PROC
21                          LDR R1, =SYSCTL_RCGCTIMER ; Start Timer0
22                          LDR R2, [R1]
23                          ORR R2, R2, #0x02
24                          STR R2, [R1]
25                          NOP ; allow clock to settle
26                          NOP
27                          NOP
28                          LDR R1, =TIMER1_CTL ; disable timer during setup
29                          LDR R2, [R1]
30                          BIC R2, R2, #0x01
31                          STR R2, [R1]
32
33                          LDR R1, =TIMER1_CFG ; set 16 bit mode
34                          MOV R2, #0x04
35                          STR R2, [R1]
36
37                          LDR R1, =TIMER1_TAMR
38                          MOV R2, #0x07 ; set to periodic, count down
39                          STR R2, [R1]
40
41                          LDR R1,=TIMER1_CTL
42                          LDR R2,[R1]
43                          ORR R2,R2,#0x0C
44                          STR R2,[R1]
45
46                          LDR R1, =TIMER1_TAILR ; initialize match clocks
47                          MOV R2,#0xFFFFFFFF
48                          STR R2, [R1]
49
50                          LDR R1,=TIMER1_CTL
51                          LDR R2,[R1]
52                          ORR R2,R2,#0x0F
53                          STR R2,[R1]
54
55                          LDR R1,=TIMER1_IMR
56                          MOV R2,#0x01
57                          STR R2,[R1]
58
59                          BX  LR
60                          ENDP
61                          END
62
63
```