# PCM-9362 Watchdog Timer Programming Note

IC: SMSC 3114

Base I/O address ---------- A00h

**Device Register offset:**

GPIO/WDT Selection Register ( default = 0x01 ) ---------- 47h

- *Bit [0] -> In/Out : don't care*
- *Bit [1]-> Polarity : don't care*
- *Bit [3:2] 11 - WDT; 00 - GPIO; 01 - LED1---------- set to 11*
- *Bit [6:4] -> reserved*
- *Bit [7] Output Type Select -> 1 - Open Drain,0 - Push Pull----- set to 0*

Watch-dog Timeout Register ( default = 0x00 ) ---------- 65h

- *Bit [6:0] -> reserved*
- *Bit [7] -> Time out Value Unit Select: 0 - Minute (default), 1 - Second*

Watch-dog Timeout Value Register (default = 0x00 ) ---------- 66h

- *Binary coded. Units=minutes (default) or seconds, selectable via Bit[7] of Watch-dog timeout register (0x65)*
- *0x00 -> Time out disable*
- *0x01 -> Time out = 1 minute (second)*

  *.*

  *.*
- *0xFF -> Time-out = 255 minutes (second)*

Watch-dog Timer Configuration ( default = 0x00 ) ---------- 67h

- *Bit [0] -> reserved*
- *Bit [1] -> Keyboard Enable:*
  *1 - WDT is reset upon a keyboard interrupt*
  *0 - WDT is not affected by keyboard interrupts*
- *Bit [2] -> Mouse Enable:*
  *1 - WDT is reset upon a mouse interrupts.*
  *0 - WDT is not affected by mouse interrupts.*
- *Bit [3] -> reserved*
- *Bit [7:4] -> WDT Interrupt Mapping*
  *1111 = IRQ15*

  *.*

  *.*
  *0011 = IRQ3*
  *0010 = IRQ2 (do not use)*
  *0001= IRQ1*
  *0000 = Disable*

Watch-dog Timer Control ( default = 0x00 ) ---------- 68h

- *Bit [0] -> Watch-dog Status bit, RW:*
  *1 - WD timeout occurred*
  *0 - WD timer counting*
- *Bit [1] -> reserved*
- *Bit [2] -> Force Timeout, W:*

*1 - Force WD timeout event, this bit is self-clearing*

- *Bit [3] -> P20 Force Timeout Enable, R/W*

  *1 - Allows rising edge of P20, from Keyboard Controller to force the WD timeout event. A WD timeout event may still be forced by setting the force timeout bit – bit 2*

  *0 - P20 activity dose not generate the WD timeout event*
- *Bit [7:4] -> reserved*

**Sample program in assembly language:**

```
MOV DX, A47h
IN AL, DX
OR AL, 0Ch          ; Set to Watch-dog function
OUT DX, AL

MOV DX, A65h
IN AL, DX
OR AL, 80h          ; Mode -> second
OUT DX, AL

MOV DX, A66h
MOV AL, ??          ; Set ?? sec
OUT DX, AL          ; Start WDT
```