Inchworm ICD2 Hello World

Hello World - MPLAB IDE v7.51

File   Edit   View   Project   Debugger   Programmer   Tools   Configure   Window   Help

These program examples are designed to be short and simple. Good programming practices would include plenty of comments to make the program easier to read later.

❶ Configure/ Select Device
(select your target PIC)

❷ File/ New
- Enter the program in to the editor
- **File/ Save As…**/Hello World.asm

❸ Project/ Wizard
(choose the following when prompted)
- step 2 Microchip MPASM Toolsuite
- step 3 Project name "Hello World"
- step 4 **Add>>** Hello World.asm

❹ Programmer/ Select Programmer/ MPLAB ICD2
- **Settings/ Communication/ Com Port/** Com x
- **Connect**

❺ Build All
(if the program doesn't build, check the program in the editor)

❻ Program *should be set to automatic after* **Build All**

❼ Release from Reset *allows the target to run*

Congratulations
You've just created your first PIC program
If your LED doesn't flash, check your work and try again

Fireflys LED2 may flash Red or Green. Can you figure out why... Hint: Setting or resetting a single bit on PORTA will set the color
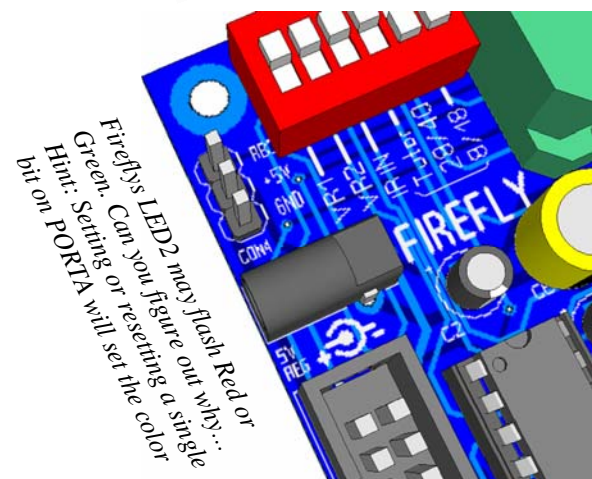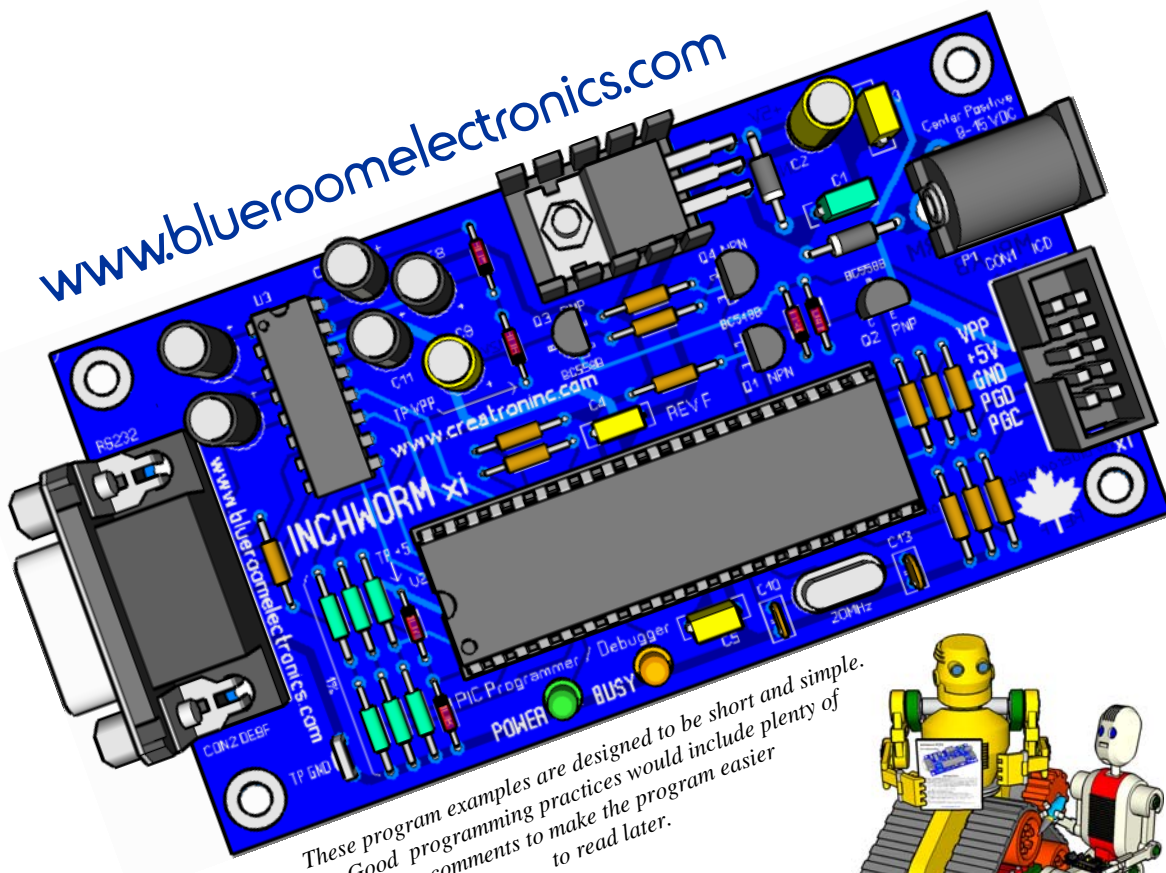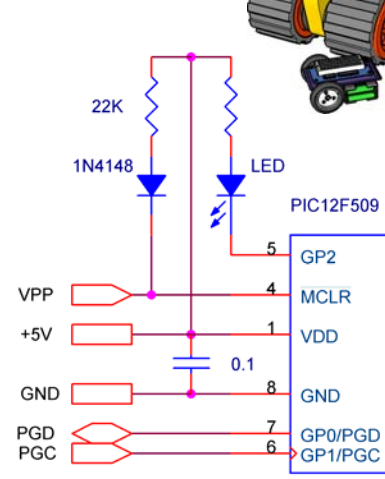
FIREFLY 16F88
```
   ;*** WDT reset toggles
LED2
   list     p=16F88
   include <p16F88.inc>
   __CONFIG _CONFIG1, 0x2F34
   org      0
   bsf      STATUS, RP0
   movlw    b'00001110'
   movwf    OPTION_REG
   movlw    b'00111111'
   movwf    TRISA
   bcf      STATUS, RP0
   movlw    b'10000000'
   xorwf    PORTA, f
   sleep
   end
```

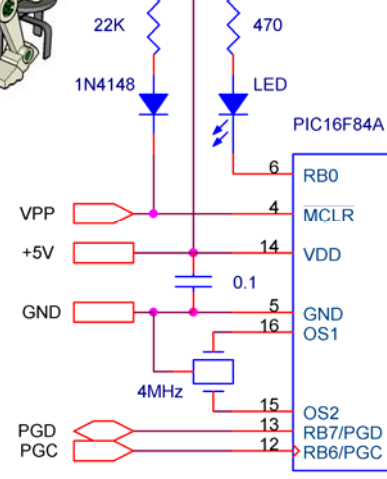## 12F509
```
;*** WDT reset toggles GP2
   list     p=12F509
   include <p12F509.inc>
   __CONFIG 0x0FFE
   org      0
   movlw    b'00001110'
   option
   movlw    b'11111011'
   tris     GPIO
   movlw    b'00000100'
   xorwf    GPIO, f
   sleep
   end
```

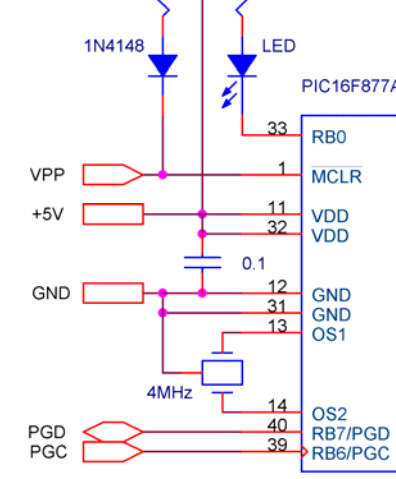## 16F84A
```
;*** WDT reset toggles RB0
   list     p=16F84A
   include <p16F84A.inc>
   __CONFIG 0x3FF5
   org      0
   bsf      STATUS, RP0
   movlw    b'00001110'
   movwf    OPTION_REG
   movlw    b'11111110'
   movwf    TRISB
   bcf      STATUS, RP0
   movlw    1
   xorwf    PORTB, f
   sleep
   end
```

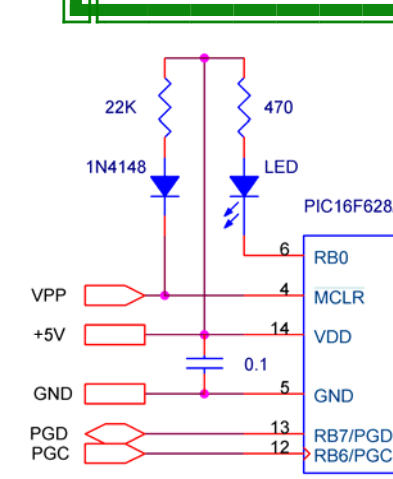## 16F877A
```
;*** WDT reset toggles RB0
   list     p=16F877A
   include <p16F877A.inc>
   __CONFIG 0x3F35
   org      0
   bsf      STATUS, RP0
   movlw    b'00001110'
   movwf    OPTION_REG
   movlw    b'10111110'
   movwf    TRISA
   bcf      STATUS, RP0
   bcf      PORTA, 0
   movlw    b'10000000'
   xorwf    PORTA, f
   sleep
   end
```
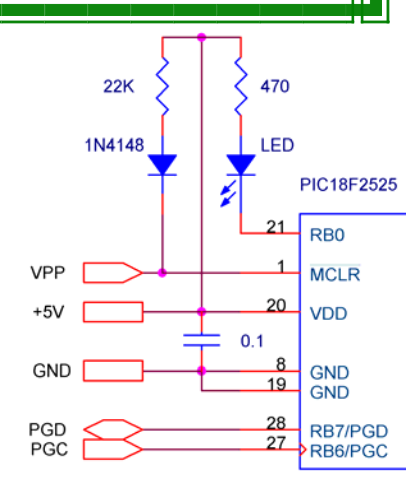
16F628A
```
;*** WDT reset toggles RB0
   list     p=16F628A
   include <p16F628A.inc>
   __CONFIG 0x3F34
   org      0
   bsf      STATUS, RP0
   movlw    b'00001110'
   movwf    OPTION_REG
   movlw    b'11111110'
   movwf    TRISB
   bcf      STATUS, RP0
   movlw    1
   xorwf    PORTB, f
   sleep
   end
```

18F2525
```
;*** WDT looping toggles RB0
   list     p=18F2525
   include <p18F2525.inc>
   CONFIG OSC=INTIO67
   CONFIG WDT=ON, WDTPS=128
   org      0
   movlw    b'11111110'
   movwf    TRISB
   movlw    b'00000001'
   xorwf    LATB
   sleep
   end
```

Tip: On PICs that support Debug (16F88 (Firefly) , 16F87x, 18F, etc) you can modify the program by changing the SLEEP command to GOTO 0x000 The WDT must be disabled in debugger mode; so allow MPLAB to disable it when in the debugger (The GOTO 0x000 will simulate a reset) Remember: Use the View/Watch and watch PORTA or PORTB as you single step the program.

blueroomelectronics

The LED should flash slightly slower than 1Hz. This is the WDT (Watchdog Timer) timing out and resetting the PIC. The LED flashes because the bit is inverted (xorlw) every time the program has restarted.