DELAY FUNCTIONS

Original by F.Zia, rewritten for the PIC18F4550 by M.F.v.Lieshout, March 2006

Information sources

The information in this document is obtained from the following Microchip manuals:
- PIC18F4550 Datasheet
- PICmicro® 18C MCU Family Reference Manual
- MPLAB C18 C Compiler Libraries

Function Prototypes:

For a detailed description of these functions, please see:
Section 4.5 Delay Functions, in MPLAB C18 C Compiler Libraries manual.

```
#include <delays.h>
void Delay1TCY ( void ); // Delay one instruction cycle.
void Delay10TCYx ( unsigned char unit ); // Delay in multiples of 10 instruction cycles.
void Delay100TCYx ( unsigned char unit ); // Delay in multiples of 100 instruction
```
cycles.
```
void Delay1KTCYx ( unsigned char unit ); // Delay in multiples of 1,000 instruction
```
cycles.
```
void Delay10KTCYx ( unsigned char unit ); // Delay in multiples of 10,000 instruction
```
cycles.
Notes:
1. The letter 'x' in the function name above stands for 'times' or 'multiplication'. It is not to be replaced by a number as done in some other function names.
2. **unit** is an 8-bit value in the range [0,255]. **unit** = 0 is equivalent to **unit** = 256.
3. TCY stands for 'instruction cycle'. The 18F4550 is running at 20MHz oscillator frequency, but the internal frequency is 48MHz!

TCY = 4/48MHz = 1/12 us

4. Some examples:
```
Delay1TCY ();  // gives a delay of 1/12 us (implemented as a single NOP instruction).
Delay10TCYx (60);  // gives a delay of 10 x 60 x 1/12 = 600/12 = 50 us
Delay100TCYx (120);  // gives a delay of 100 x 120 x 1/12 = 1ms
Delay1KTCYx (240);  // gives a delay of 1000 x 240 x 1/12 = 20 ms
Delay10KTCYx (0);  // gives a delay of 10000 x 256 x 1/12 = 213.3 ms
```