Using the PROTON+ Compiler with MPLAB^{tm}

Even though the PROTON+ compiler is now recognised by Microchip^{tm} as third party software, as of yet, no high level tool suite is incorporated in the MPLAB^{tm} IDE. This will change, but we all have to be patient.

In the meantime, I have created a Legacy Tool Suite that will allow the PROTON+ compiler version 3.0 onwards to be used in the MPLAB^{tm} IDE and allow single stepping of the code on an ASM basis, or the use of the ICD2 or a Microchip^{tm} Programmer.

I'll walk you through the method of operation step by step.

First, download a copy of the latest MPLAB^{tm} IDE because this method will only work on versions 7.10 onwards. The release at the time of writing is 7.11, and I recommend using this version.

Locate the files **TLCHILL.INI** and **PROTON.MTC** within the compiler's folder and copy them into MPLAB's folder **CORE\MTC SUITES**. MPLAB^{tm} will default to location **C:\Program Files\MPLAB IDE**, so the legacy folder should be: -

C:\Program Files\MPLAB IDE\CORE\MTC SUITES.

Once these files have been copied, locate and run the file **PROTON_MPLAB.REG**. This will add entries into the registry that will register the PROTON+ Compiler as a toolsuite within MPLAB^{tm}.

Open MPLAB^{tm}, then click on the **Project Wizard** menu option.
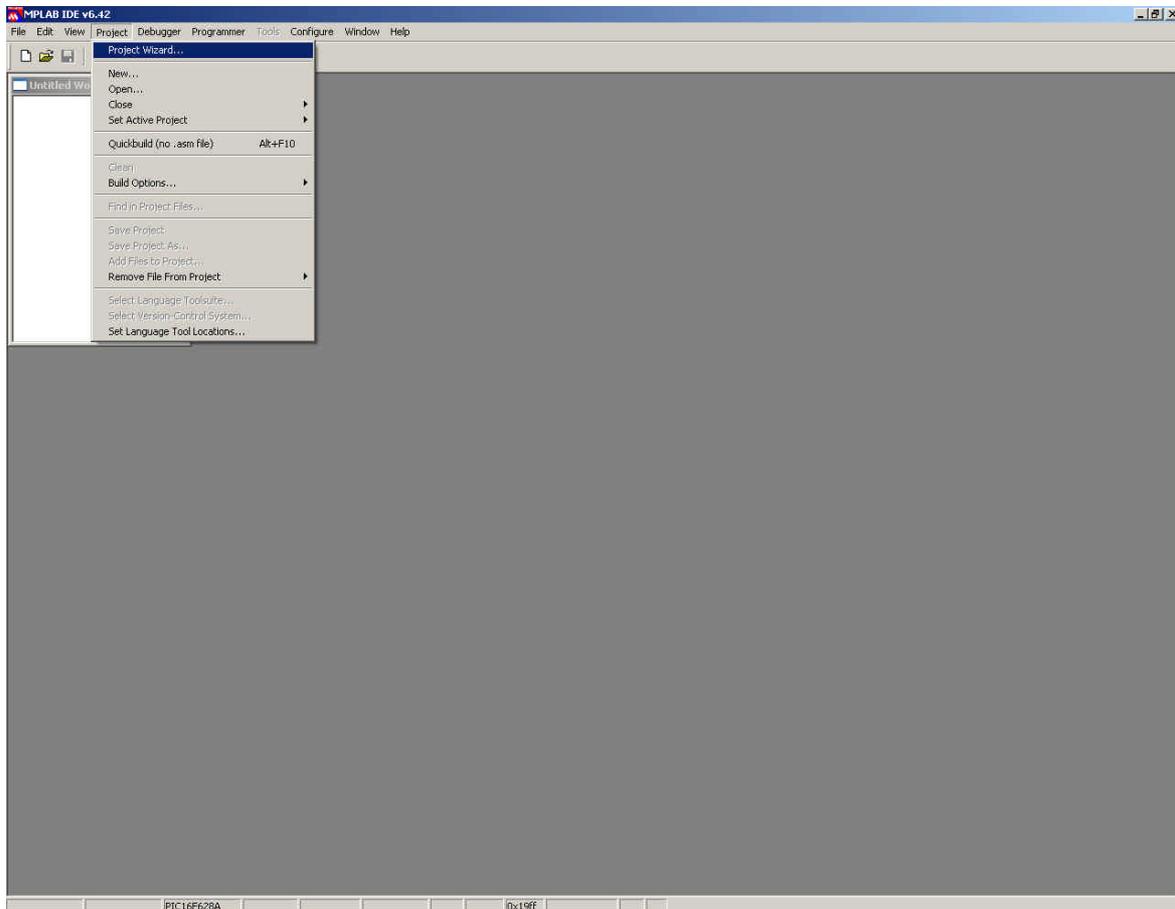
And you will be presented by the intro window as shown below.
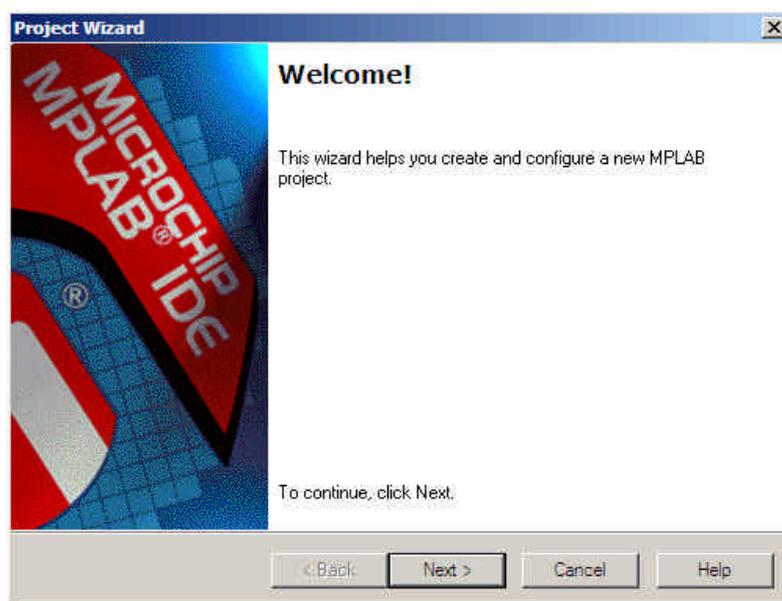
For this demonstration program, the PICmicro^{tm} of choice is the 16F628A, so in the step 1 window, choose the 16F628A device.
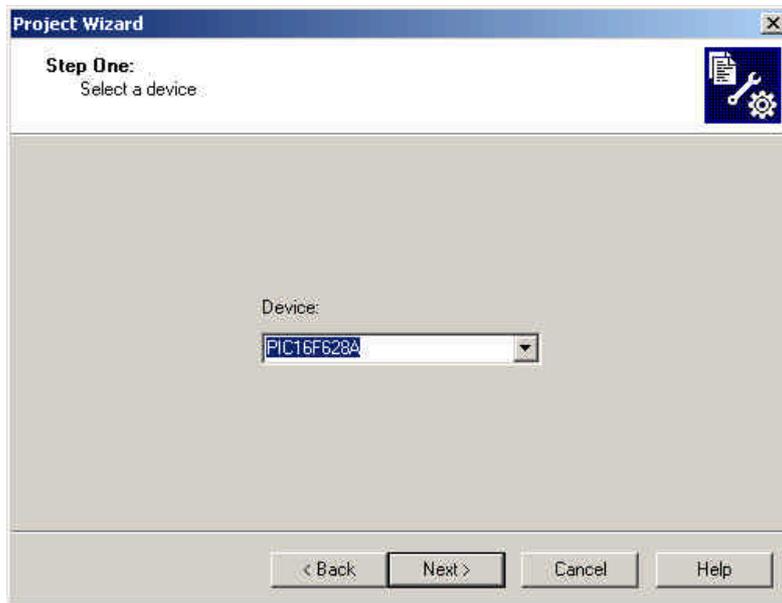
By default the device chosen in this window will be the device that the compiler uses, regardless of a **DEVICE** command within the BASIC listing. The **DEVICE** command will be ignored (see end of document to disable this).

Click **NEXT**, then choose the **Crownhill Associates PROTON+ Compiler** toolsuite, and **browse** to where the PROTON+ compiler's executable is stored. Locate the file named **PR_PLUS_MPLAB.EXE** and enter this in the Location window.
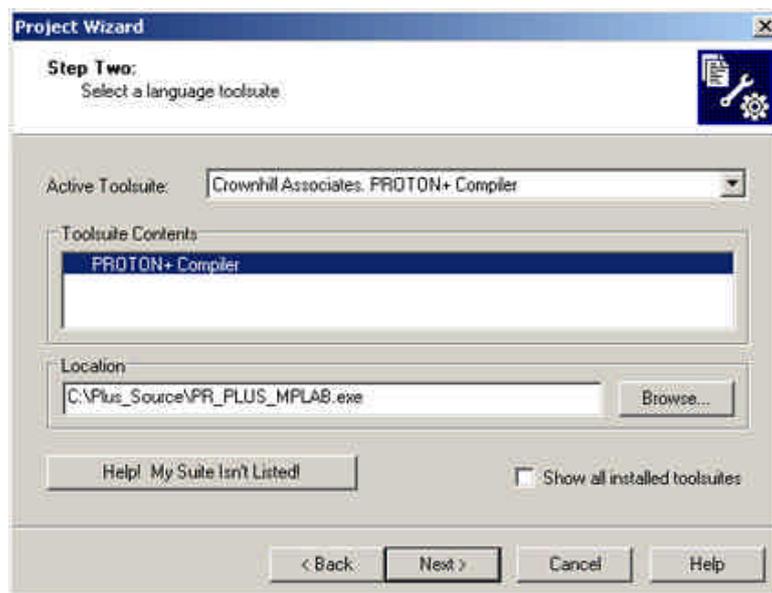
After clicking **NEXT**, a project name and location needs to be chosen in the step 3 window. The name given to the demonstration project is **MPLAB_TEST**, and it's located, in this case, in the compiler's source code folder. But it can be placed virtually anywhere on the hard drive as long as it is not nested too deeply.
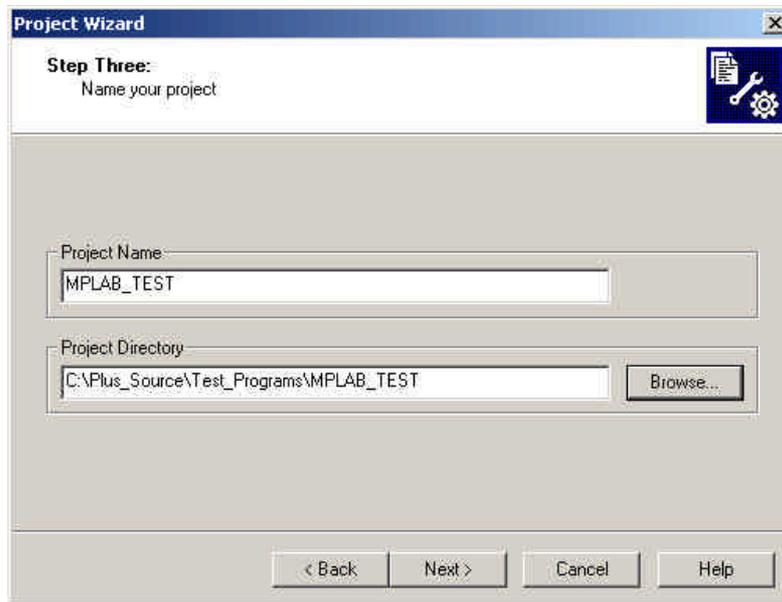
Now we need to add the BASIC file to the project. The BASIC file for the demonstration is named **MP_TEST.BAS**.
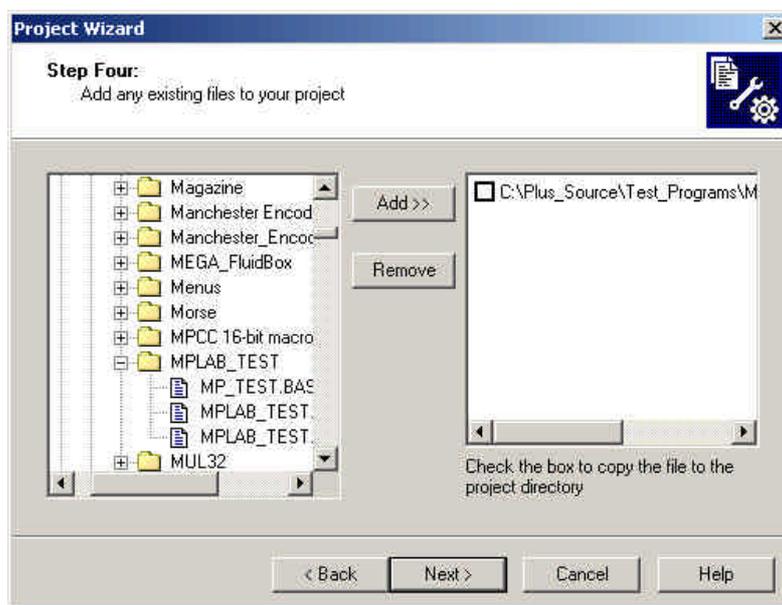
Tick the box in the right hand window only if the chosen **.BAS** file is not located in the projects folder. In this case it is, so leave it unticked.

Clicking **NEXT** a few times after step 4 will create the project. But no BASIC filename has been loaded into the IDE, so right click on **Source File** option located in the **MPLAB_TEST.MCW** window, and choose the appropriate BASIC file.
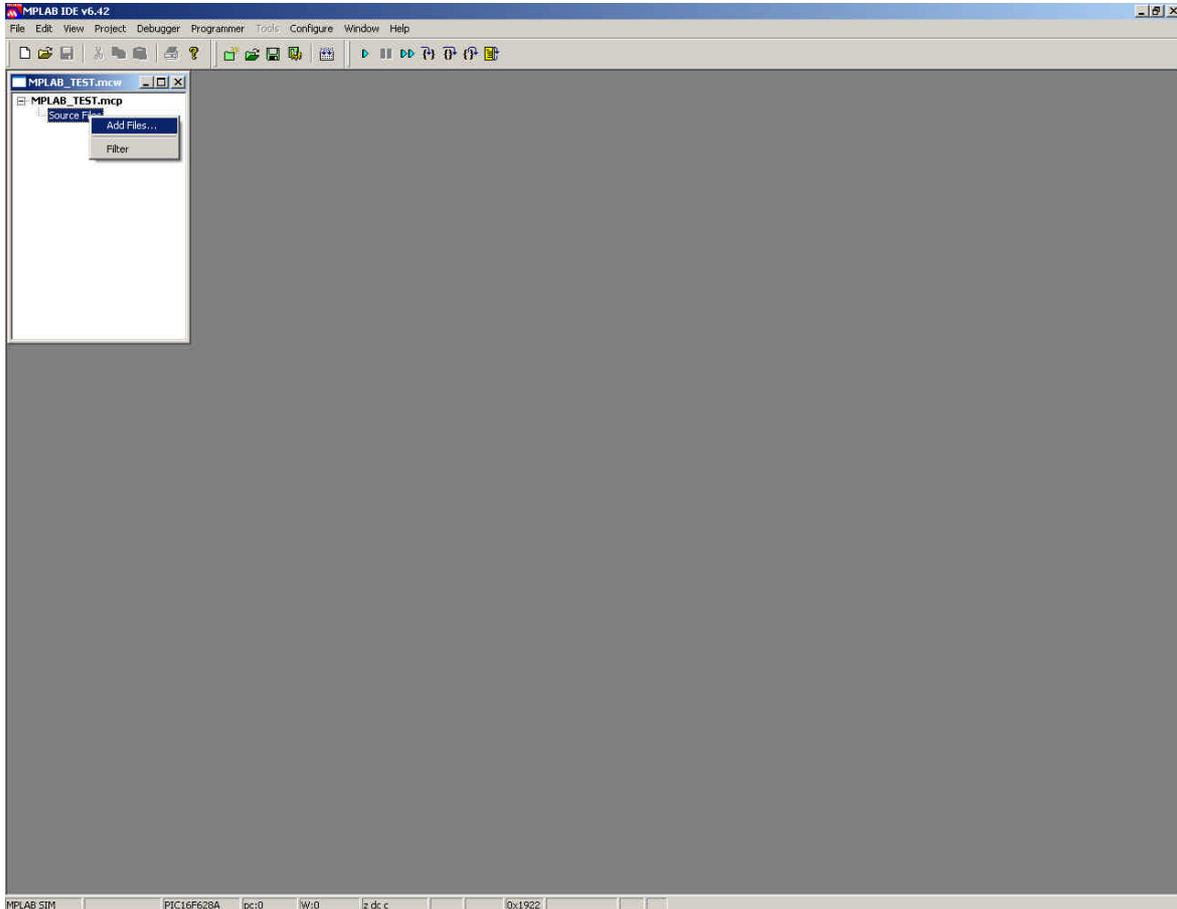
For the demonstration, the program file name is **MP_TEST.BAS**.
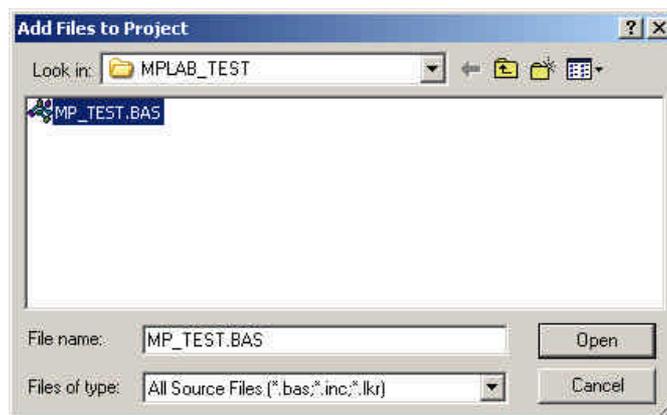
That's it!

Double click on the **MP_TEST.BAS** text in the **MPLAB_TEST.MCW** window, and the BASIC file will be opened ready to compile. Choose **Project** then **Build** or (Ctrl F10) to compile the program.

Open whatever windows as you require and single step or animate the code at its source level. i.e. Assembler level.

Disabling the Automatic DEVICE Selection.

By default, MPLAB^{tm} forces the compiler to ignore any **DEVICE** directives within the BASIC program in favour of whatever device is chosen in the **Configure->Select Device** Options menu. This can be disabled by right clicking on the filename within the **MCW** window and choosing **Build Options**.

You will be presented with a configuration window containing a single switch.

Untick the **ON** switch and click **APPLY**.

The device that the compiler recognises is now issued by the **DEVICE** directive within the BASIC program, therefore ensure that MPLAB^{tm} is configured for the correct PICmicro^{tm} device for any simulations of programming.

This has been a very brief explanation on how to incorporate the PROTON+ compiler into MPLAB^{tm}, but it gives you the basics (Pun intended). The rest is up to you. Have fun.