Application Maestro™ Software Tutorial

Getting Started with Application Maestro Software: An Example

Adding the functionality of the Microchip Application Maestro Software's pre-written modules to your code requires only a few simple steps. For this example, we'll be using the interrupt-driven UART communications module to create an assembly routine for USART communications. Once the routine is configured, we'll add the generated files to an existing assembly code project named "MyProject". We are using MPLAB® IDE v6.10 in this demonstration; if you happen to be using another development environment, please modify the procedure according to that system's instructions.

1. Launch Application Maestro Software from the Windows® Start menu. (The default installation directory is "MpAM" under "Program Files". If you chose a different location during the installation process, look there instead.) The window will look something like this:
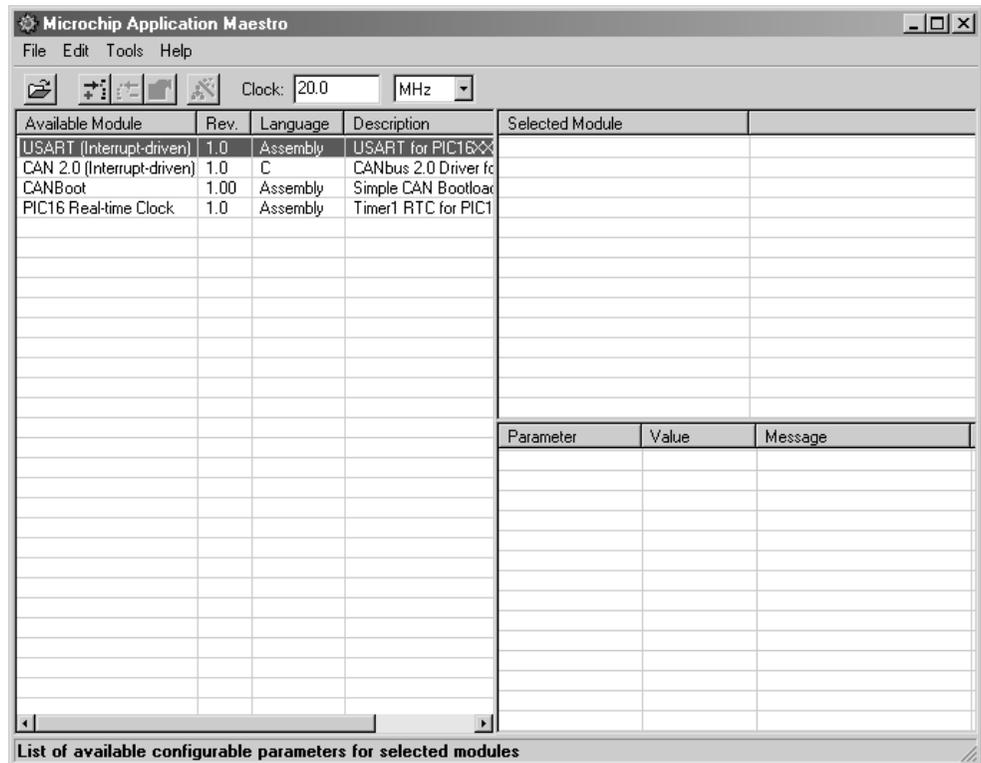
2. In the Available Module (left) pane, left-click on the "USART (Interrupt-driven)" module on the top line. Drag it into the Selected Module (upper right) pane. As soon as it's dropped there, a list of options appears in the Configuration Options (right lower) pane.

3. Double-click the "Tx Buffer" parameter to launch the "Edit Parameter" dialog box. Change the value in the "Rx Buffer Size" text box to "20", then click **OK**.
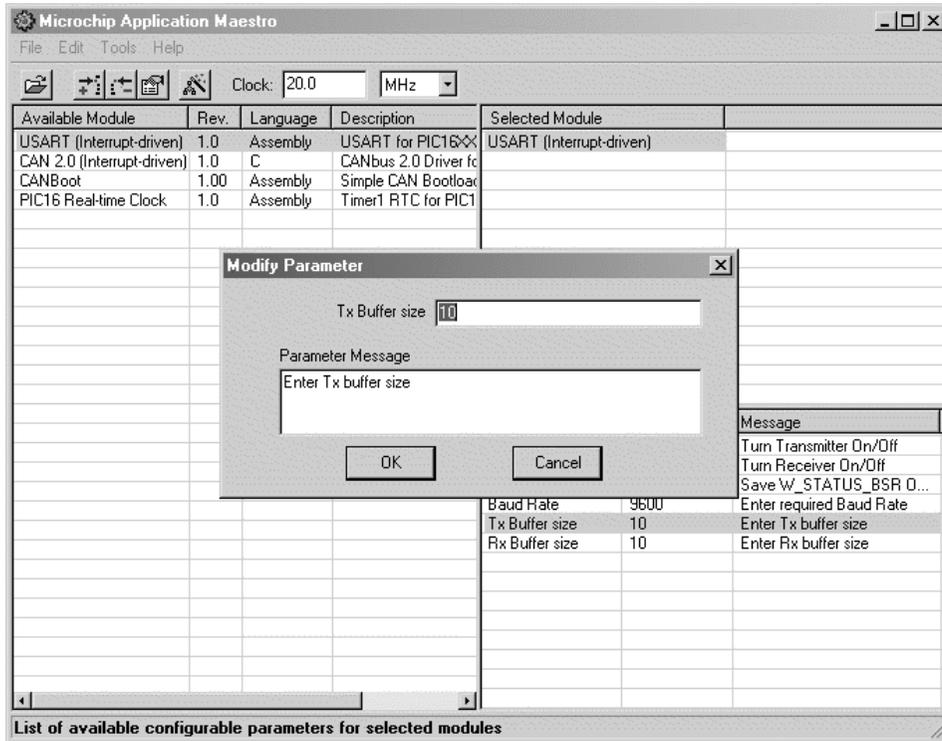
4. Now select the "RX Buffer" parameter, and repeat the process.
   At this point, the module has been configured. Now we'll make it part of our project.

5. From the *Tools* menu, select the Generate Code option.

6. At the "Select Directory" dialog box that follows, browse to the location of your MPLAB project (in this case, the "MyProject" folder of Code Projects). When you have the proper directory selected, click **OK**.
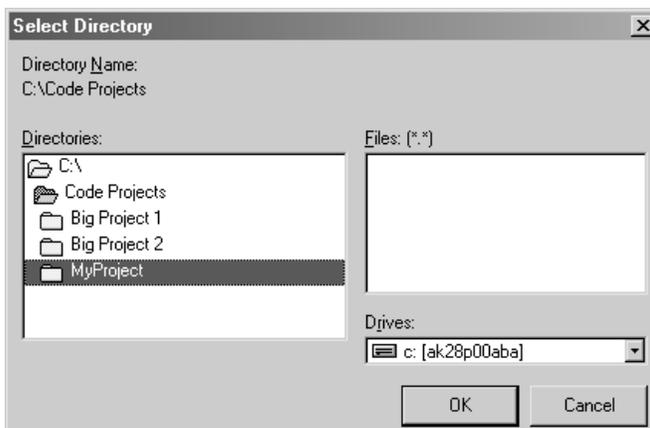
If you look in the folder "MyProject", you will find that the following files have been added:

- UARTInt.asm
- UARTInt.def
- UARTInt.inc
- 16UARTI.inc
- 18UARTI.inc
- P16xxx.inc
- P18xxx.inc
- UARTInt.ex.txt
- UARTInt.ReadMe

7. Now launch MPLAB IDE. (You can close the Application Maestro Software at this point if you wish.)

8. Open the project for MyProject. Select the workspace "tree" view (use the *Windows* option on the menu bar to select the MyProject.mcw window) to view the structure of the project and all of the included files.

   For our example, we will assume that the project already has an assembly file for the core application (in this case, MyProject.asm) and the appropriate linker script file for the target microcontroller (the PIC18F452). For the modules to work correctly, the appropriate linker script file **must** be part of your project.

9. Right-click on "Source files" node, then select the "Add Files" option. At the "Insert Files into Project" dialog box, browse to the MyProject folder and select the file uartint.asm. Click **OK**. The file is now added to the list of source files.

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10. To make it all work, it is now necessary to make a few minor additions to your code. Open `MyProject.asm`, and add these two directives to the top of the file:
    ```
    include p18f452.inc
    include UARTInt.inc
    ```
    These two files will include by reference all the necessary files to make the Application Maestro Software code work with your code.You can now call the various macros and functions, and let the module created for you by the Application Maestro Software do the serial communications work. When you're done, your MPLAB workspace and project code should look something like the following:
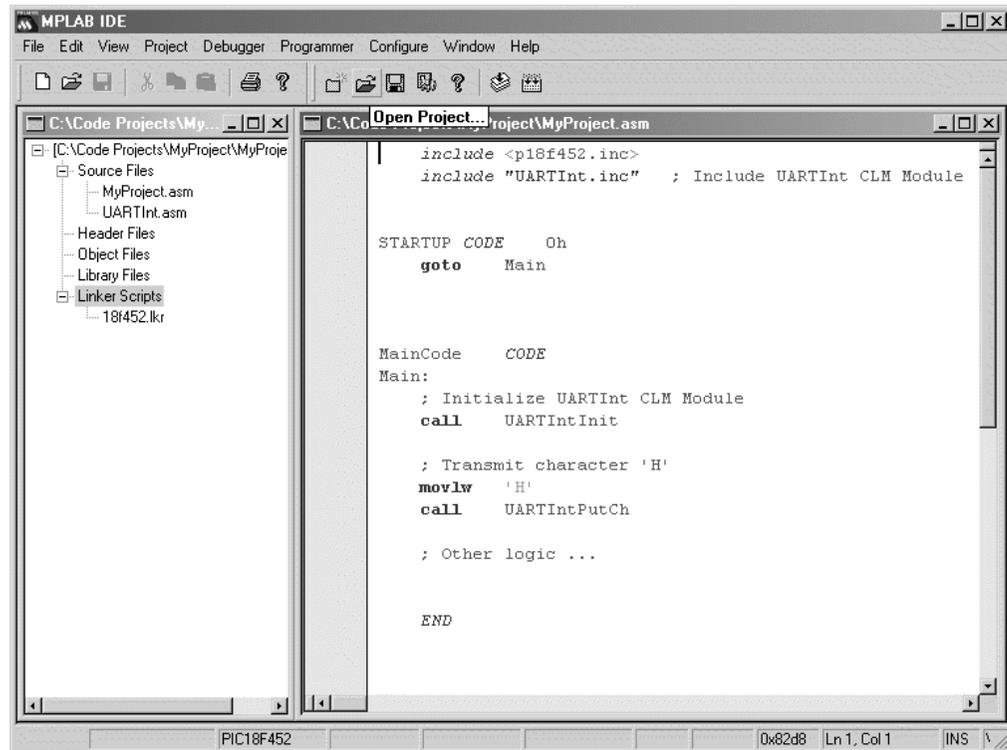
11. Save the project.

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