Using CodeWarrior V4.5 Assembler with Adapt9S12X and Serial Monitor

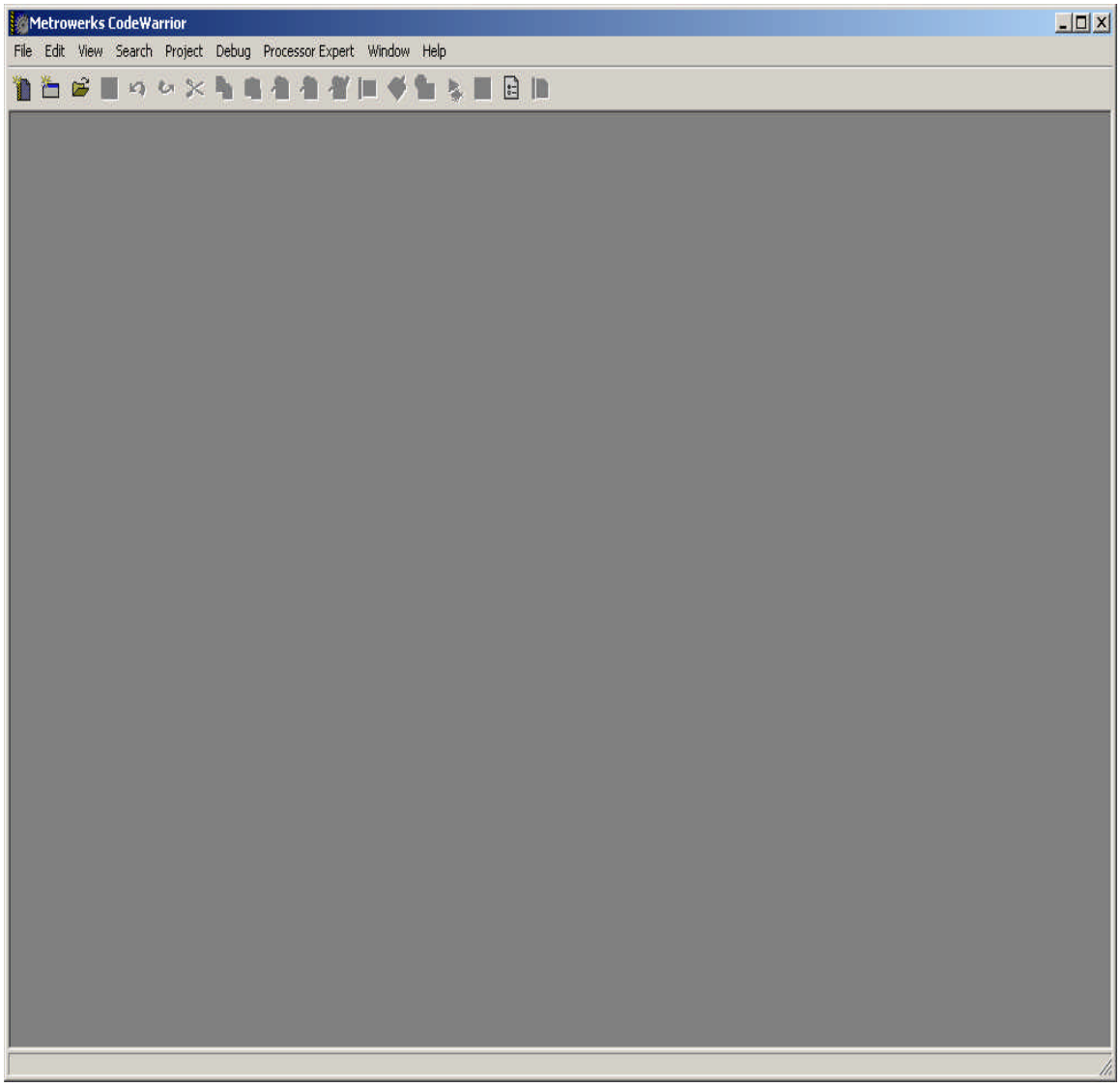
This document assumes that CodeWarrior has already been installed on your PC. It further assumes that you have all the necessary hardware, and you just need some assistance in starting to use CodeWarrior.

Download from Freescale's website.
http://www.freescale.com/webapp/sps/site/homepage.jsp?nodeId=012726

Getting Started:

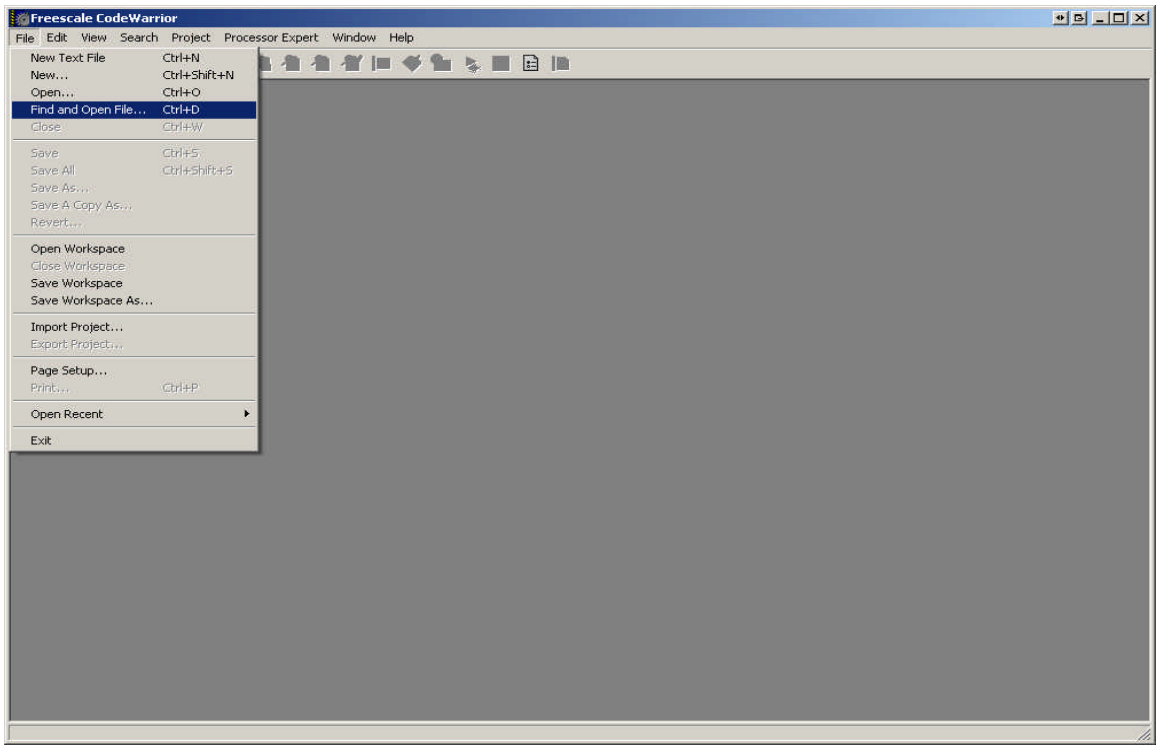
Click on the Metrowerks IDE icon 

to get started. You'll notice that the IDE is greyed out to indicate a blank working space.

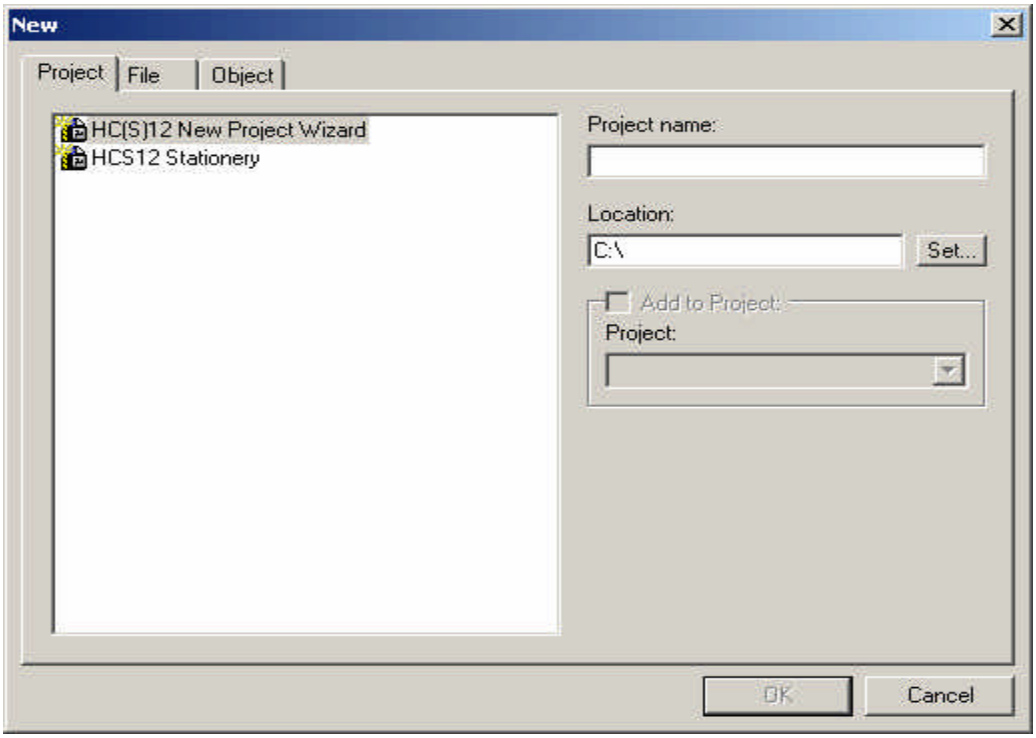


New Project:

Let's create a new project by clicking on File menu. File-New as shown below.

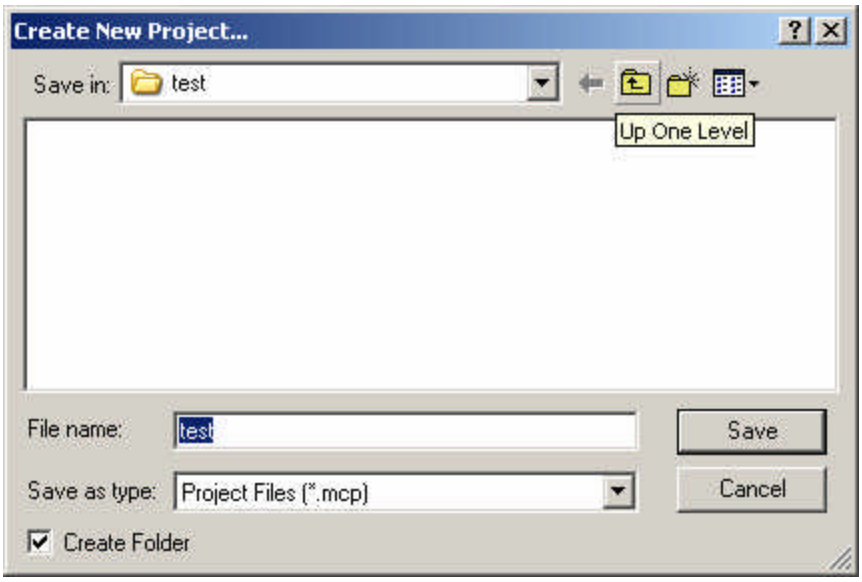


On the project tab select **HC(S)12 New Project Wizard**.

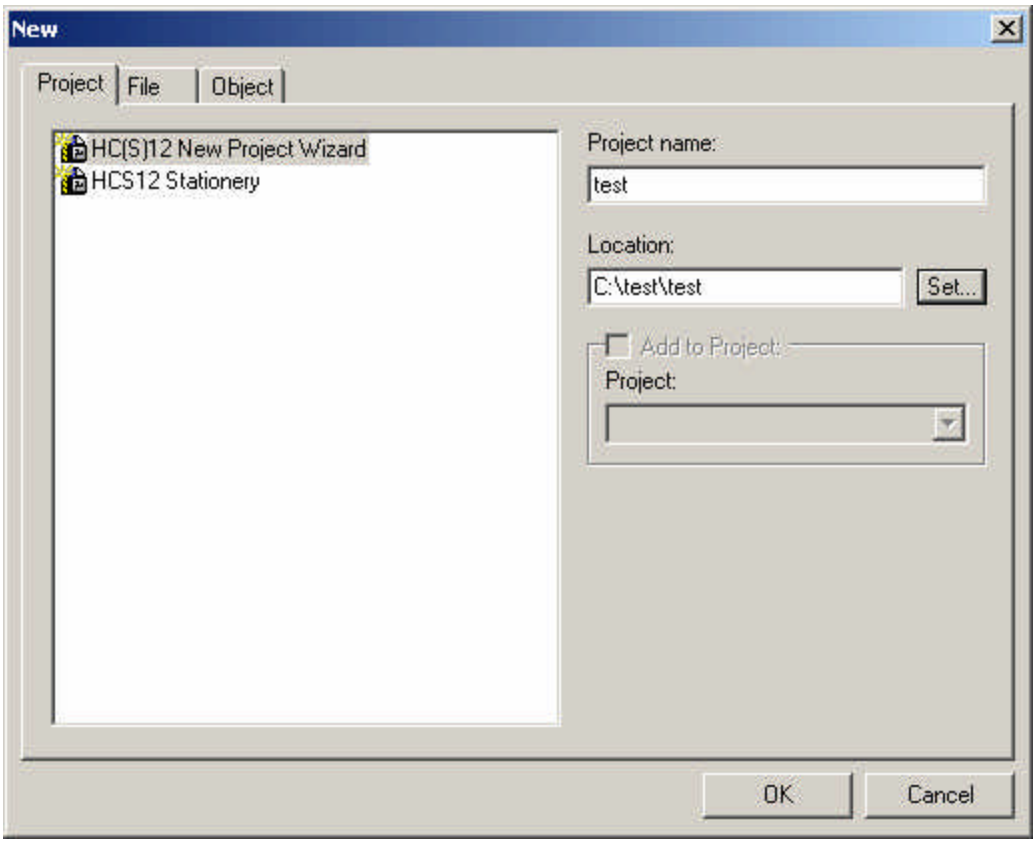


Project Name:

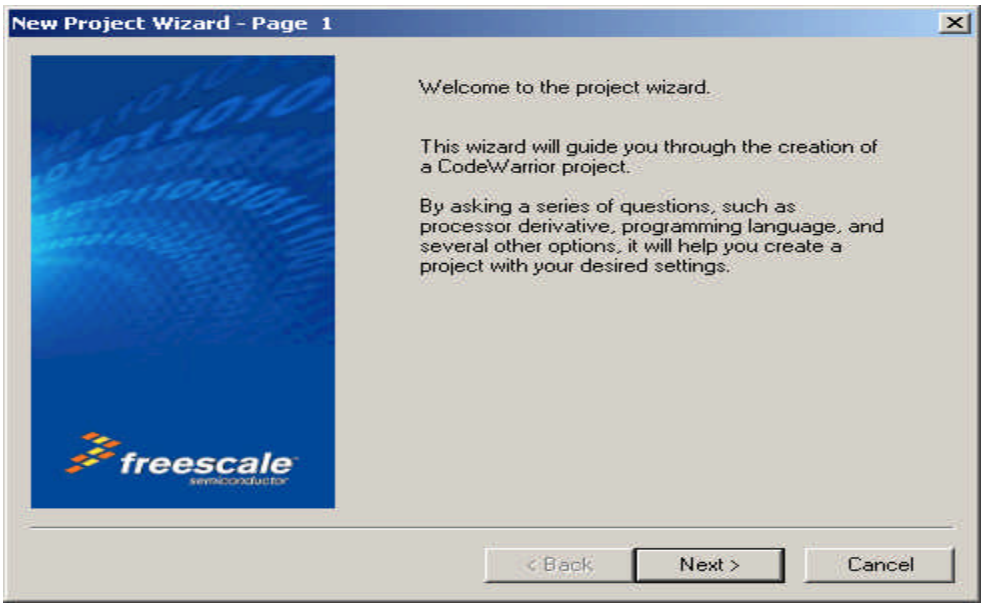
Type a project name called ***Test***. Click on the New Folder icon to create a **test** subfolder in which to save the *test.mcp* file.



The setup of the folders is now complete, as show. Press **OK** to continue.

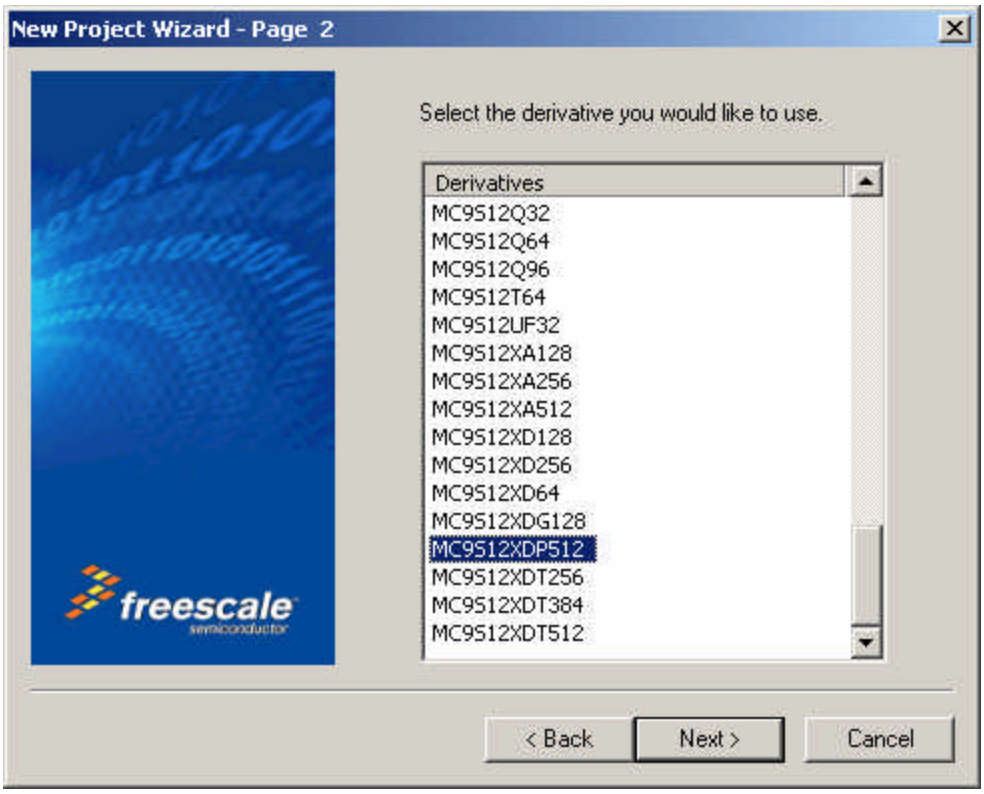


New Project Wizard – Page 1 press **Next >** to continue



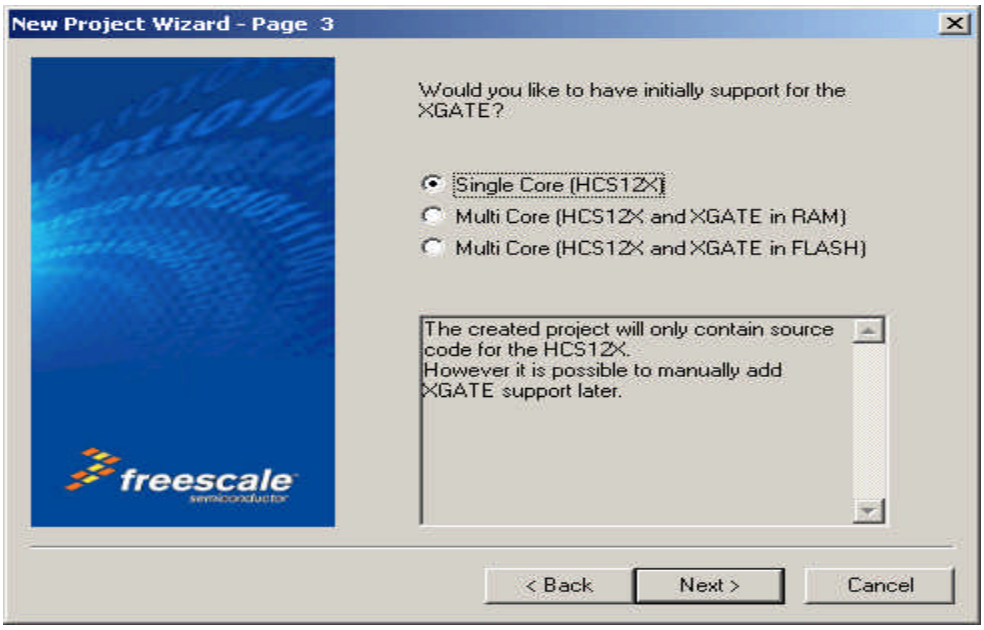
Selecting the MCU:

Scroll up or down to locate the MCU of interest. In this example, we're using Adapt9S12XDP512, so select the MCU type as **MC9S12XDP512**. Then click **Next >** to continue.

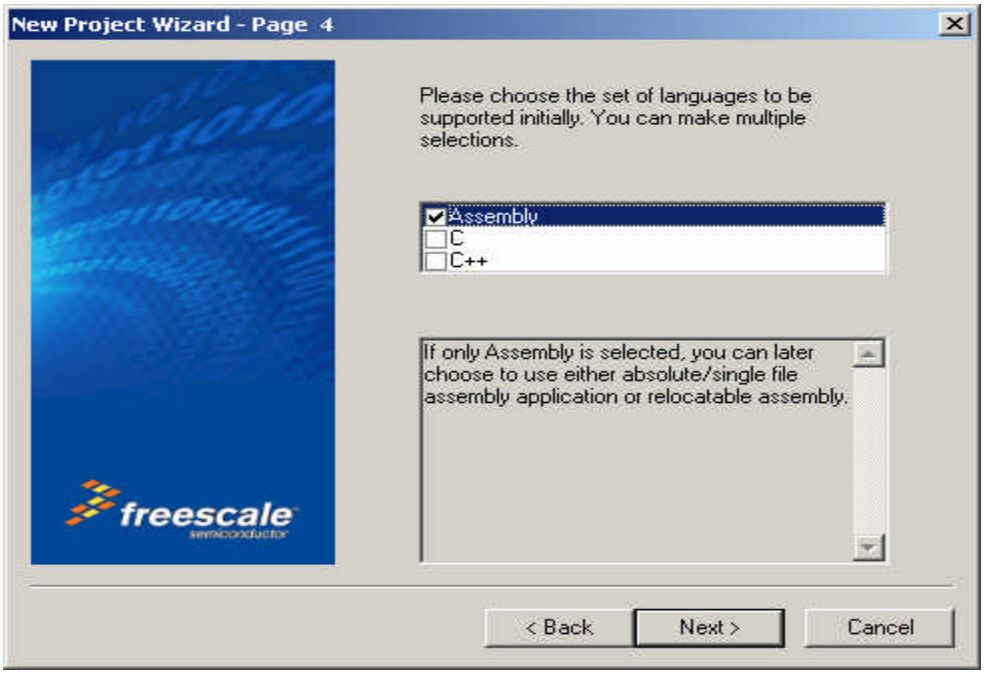


XGATE option:

In this example XGATE is not selected, rather the single core option is checked. The reason for this is that XGATE is an advanced feature of the MCU that won't be covered in this document.

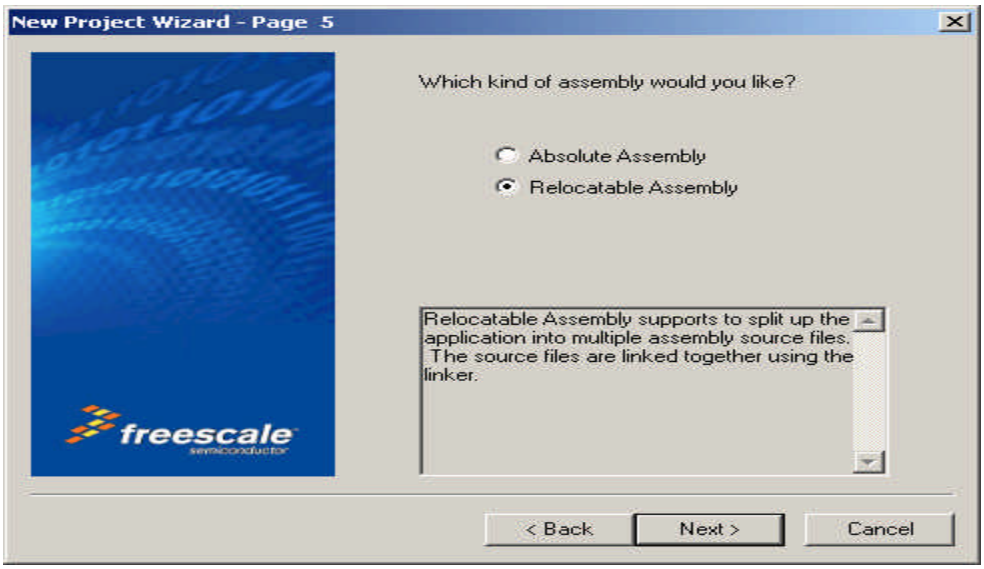


In this example the **Assembly** box is selected as shown. You may select **C** or **C++** according to your preference. Click Next to continue.



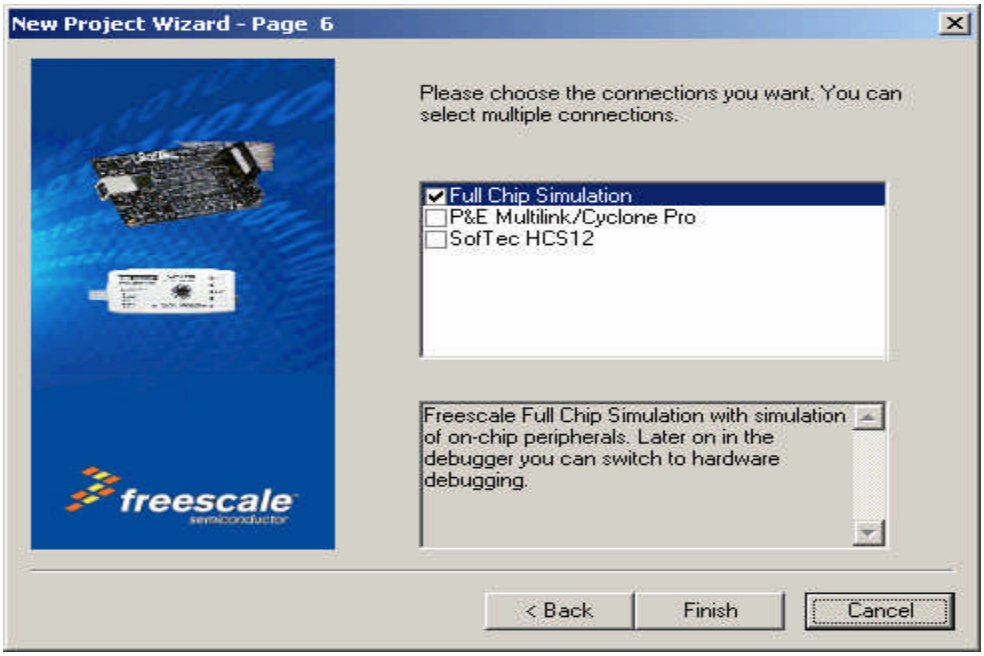
Absolute or Relocatable:

In this example the Relocatable assembly is selected as shown. Click Next to continue.



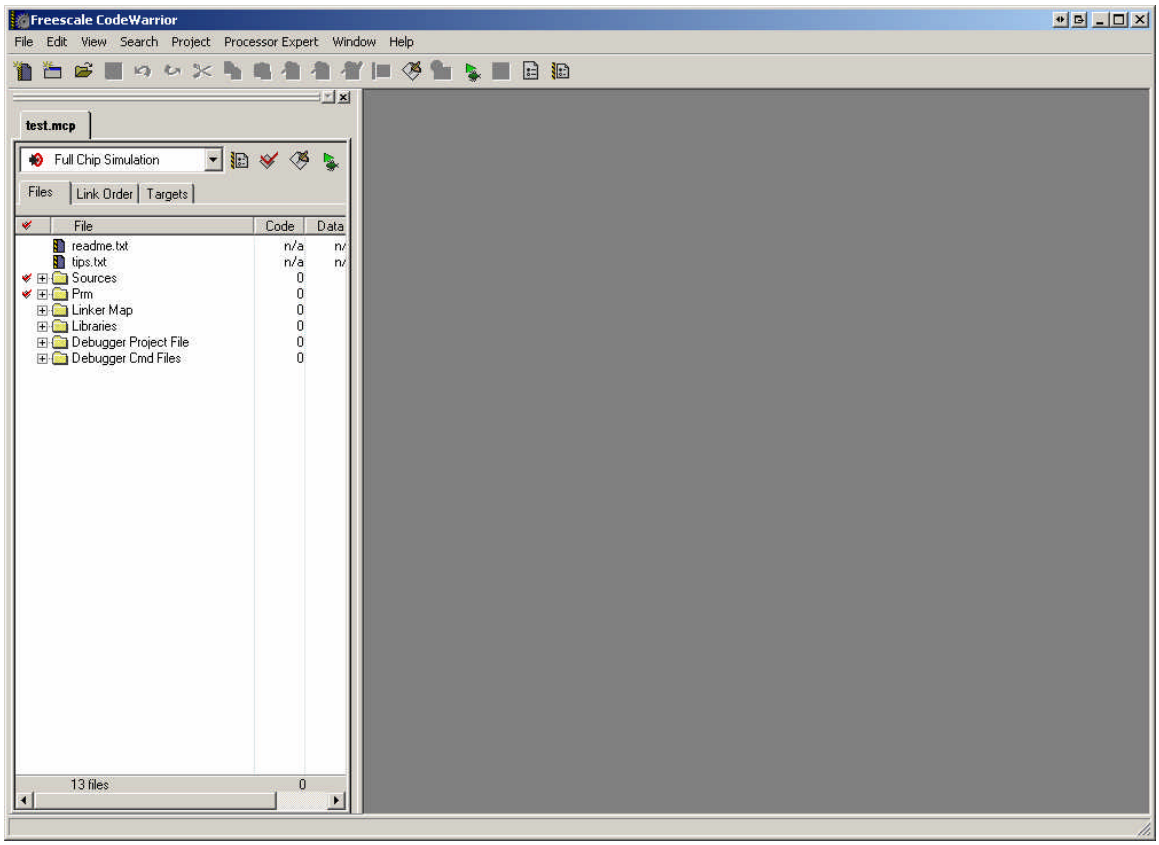
Serial Monitor:

Adapt9S12XDP512 is pre-programmed with a modified version of Freescale's Serial monitor. However CW V4.5 does not have the Serial Monitor option. Check-mark the Full chip Simulation then click ***Finish*** to continue.



Setup Complete:

Below is the IDE after the setup is completed.



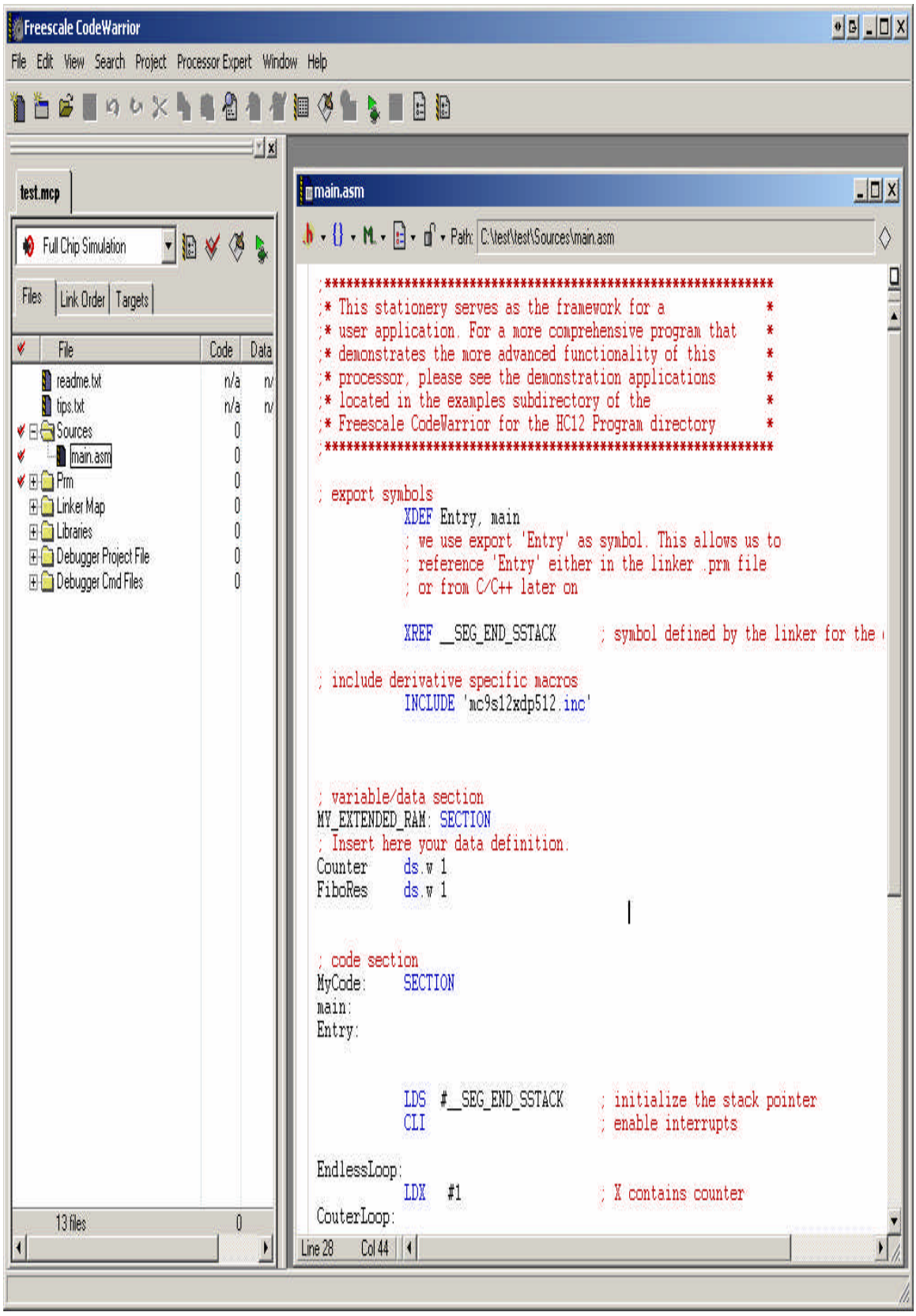
Files Tab:

Note that a new window pane is added. These contain the **Files**, **Link Order** and **Targets** tabs.

The Files tab contains 6 subfolders called **Sources**, **Prm**, **Linker Map**, **Libraries**, **Debugger Project File** and **Debugger Cmd Files**.

Clicking the **+** icon reveals the contents of these subfolders. The **Sources** folder contains the working files. By default CodeWarrior creates a file called *main.asm*. The **Prm** folder contains programming parameters. Please note that this document will only touch on the most important aspects of the IDE. You should do further reading to gain a better understanding of how to use CodeWarrior.

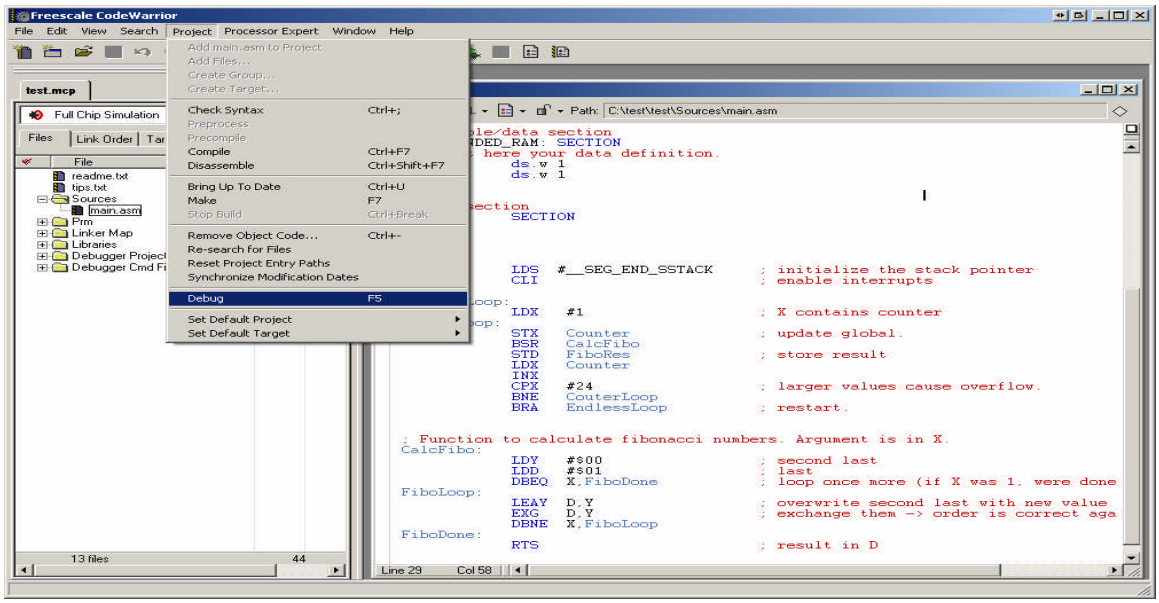
Double click on filename *main.asm* to see what it contains.



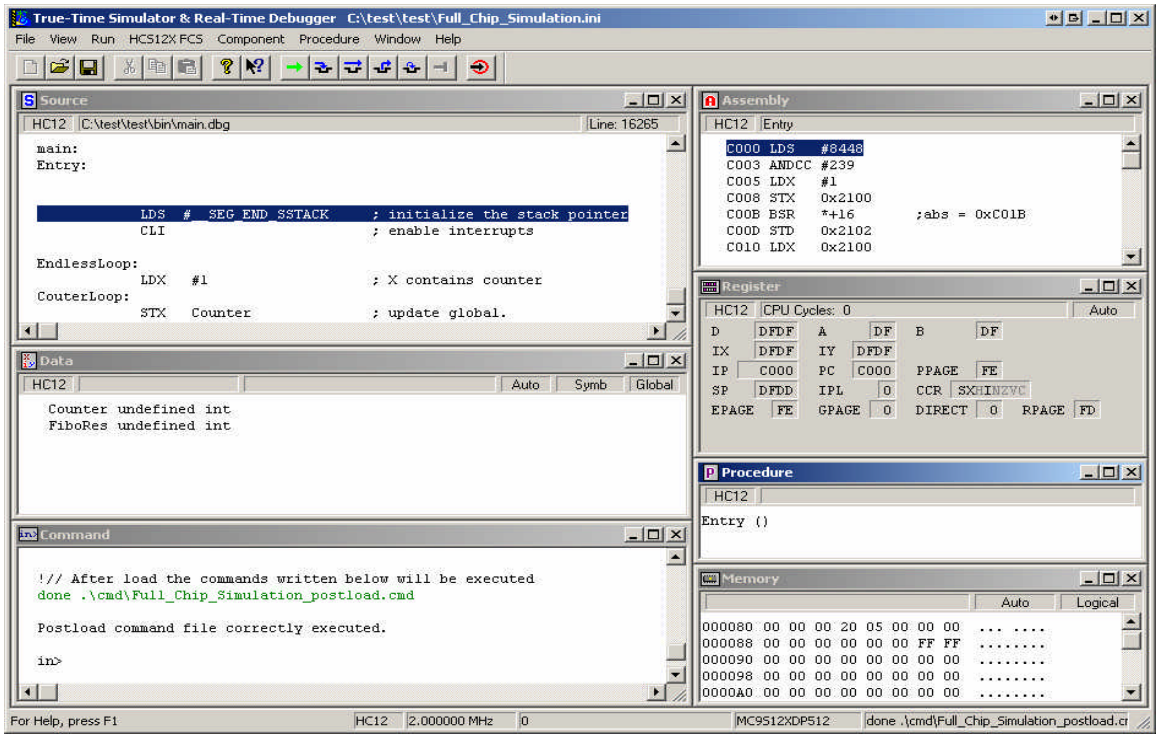
Debug:

Connect a serial cable between ***COM 1*** on your PC and Adapt9S12XDP512. Make sure the Run/Load switch on the board is in the Load position. Power up the board, and you'll notice that the PWR (Green) LED is ON.

Select the Project Menu. Project-Debug as shown below.

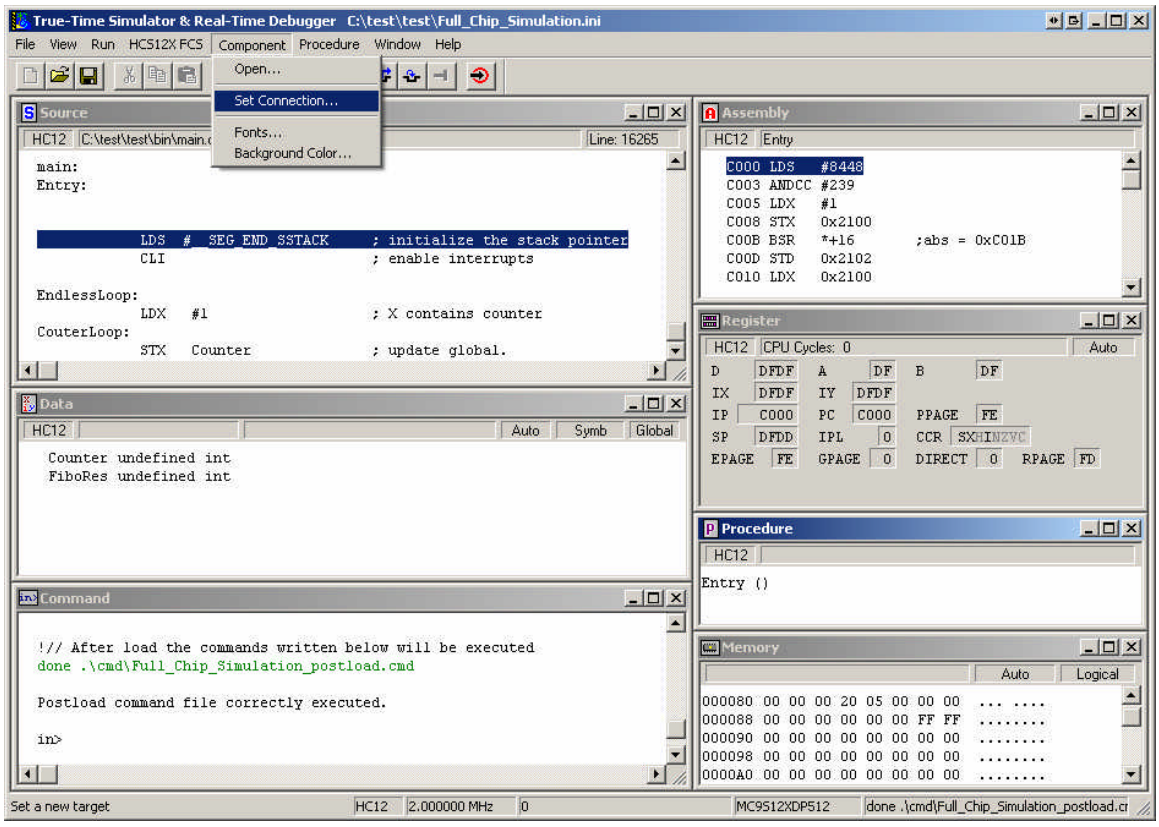


CodeWarrior will immediately initiate the Debugger screen.

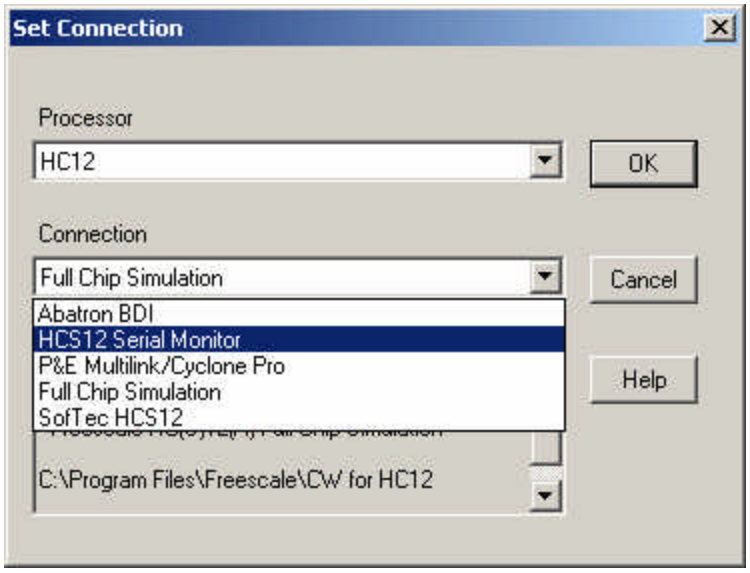


True Time Simulator and Real-Time Debugger:

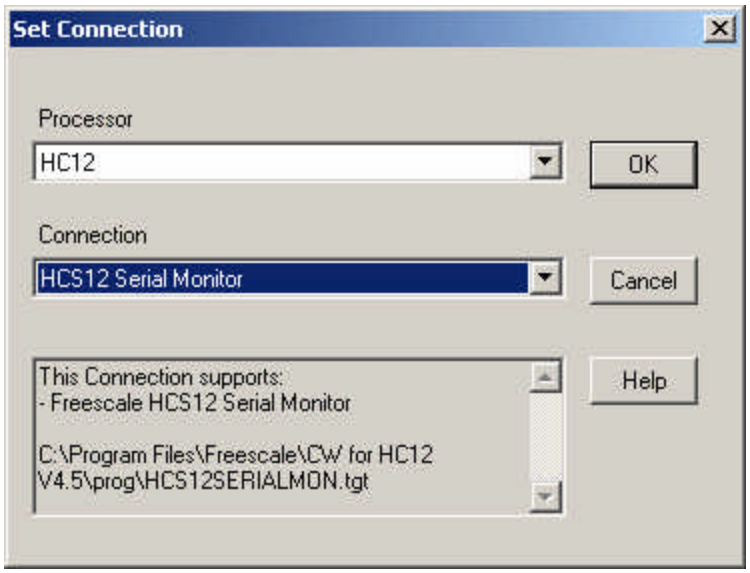
The default setting is for Full Chip simulation. For Serial monitor press the ***Component*** menu then ***Set Connection*** as shown.



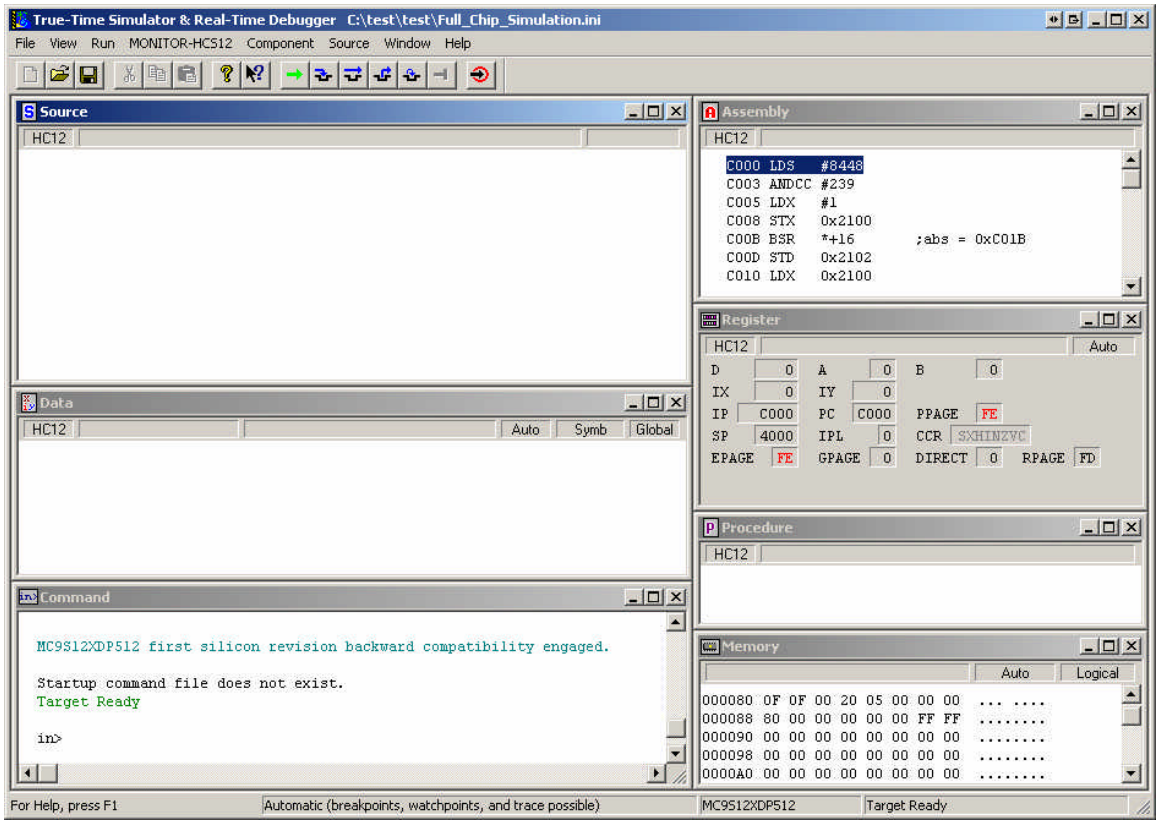
Select the **Connection** to be **HCS12 Serial Monitor** as shown.



The **Set Connection** will change accordingly. Click OK to continue.

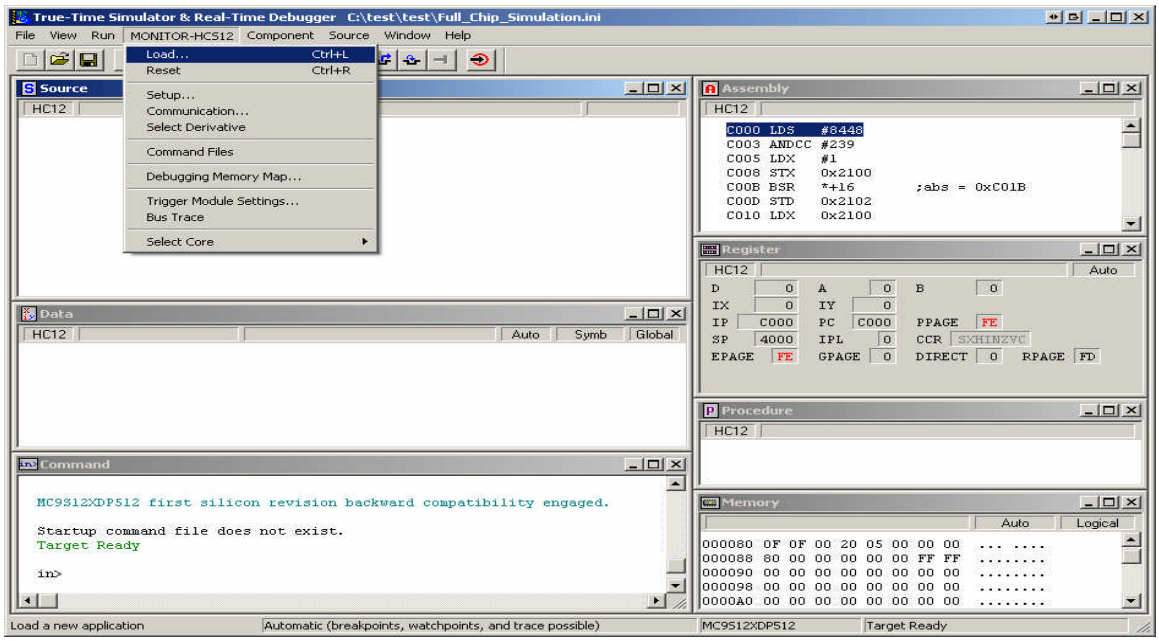


Notice that the window has changed.

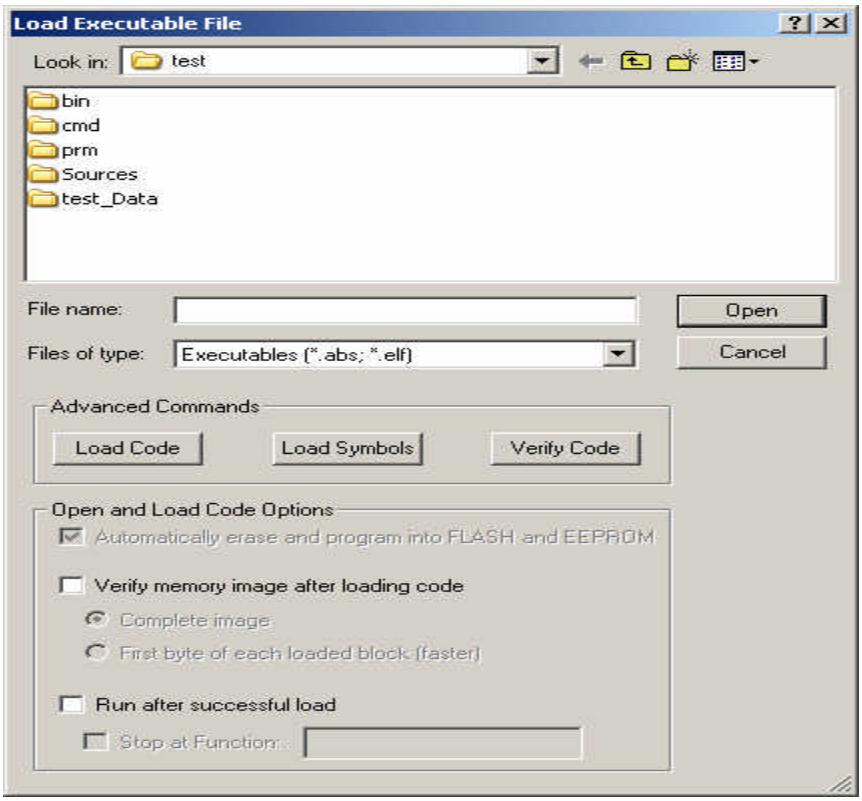


Erasing and Programming:

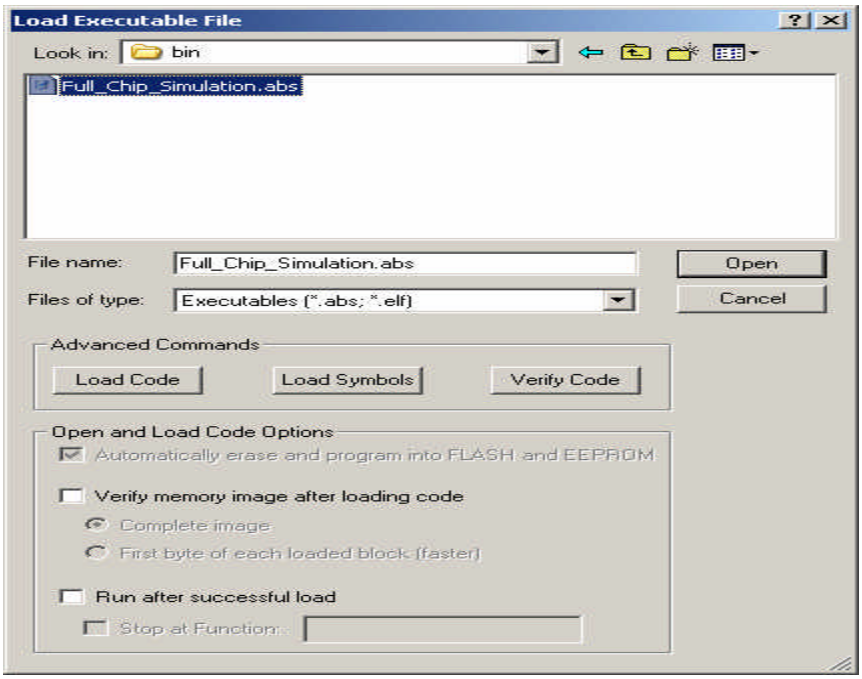
The next step is to setup the erasing and programming. Click on **MONITOR-HCS12** menu then Load… as shown.



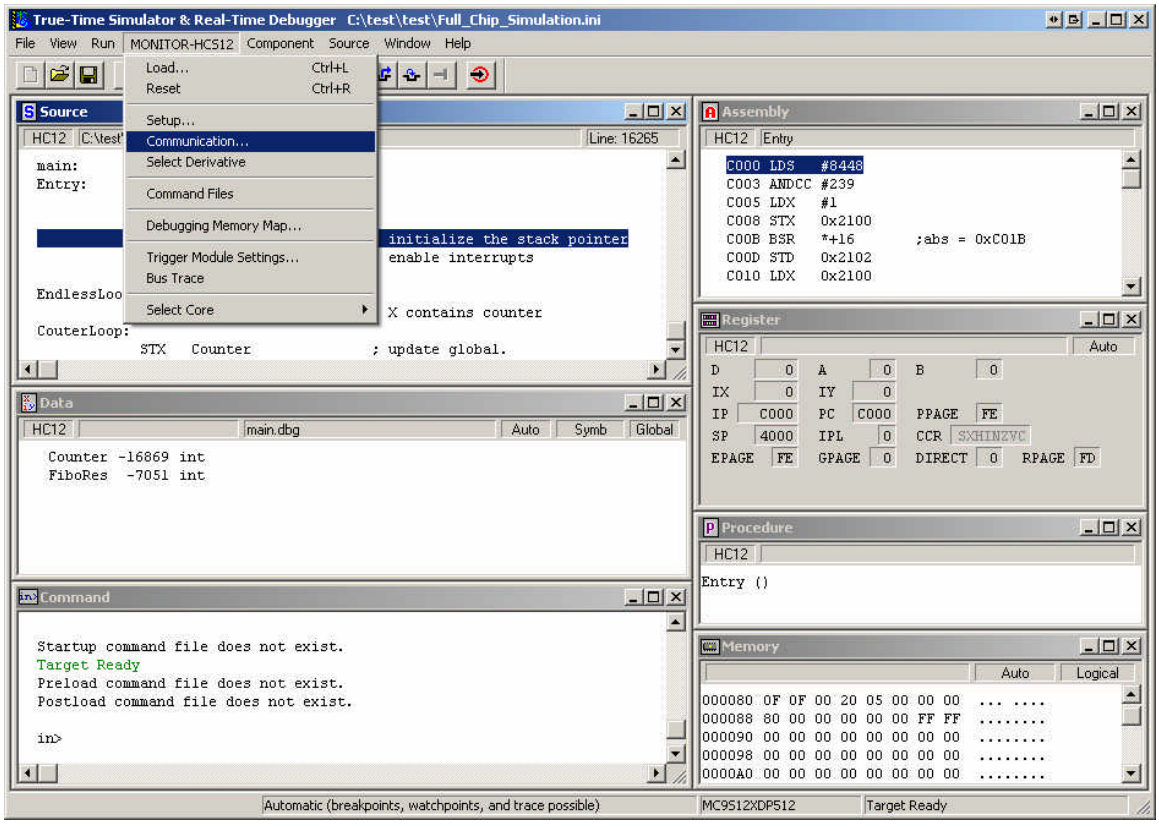
A **Load Executable File** explorer opens:



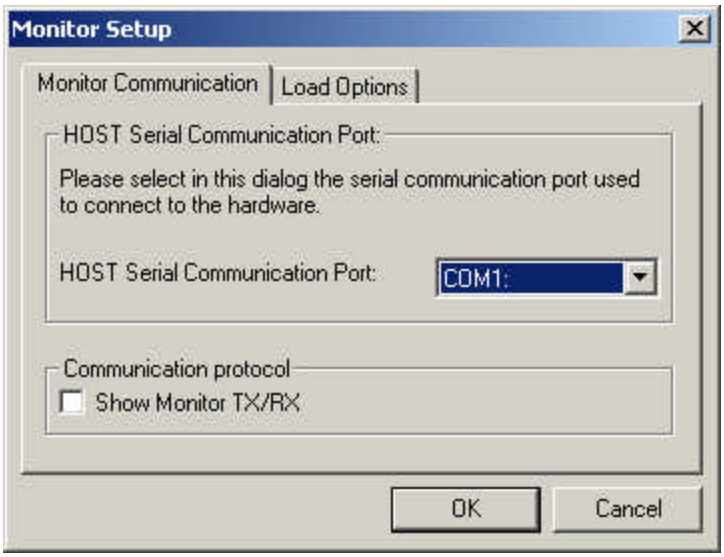
Double click on the **bin** subfolder to reveal Full_Chip_Simulator



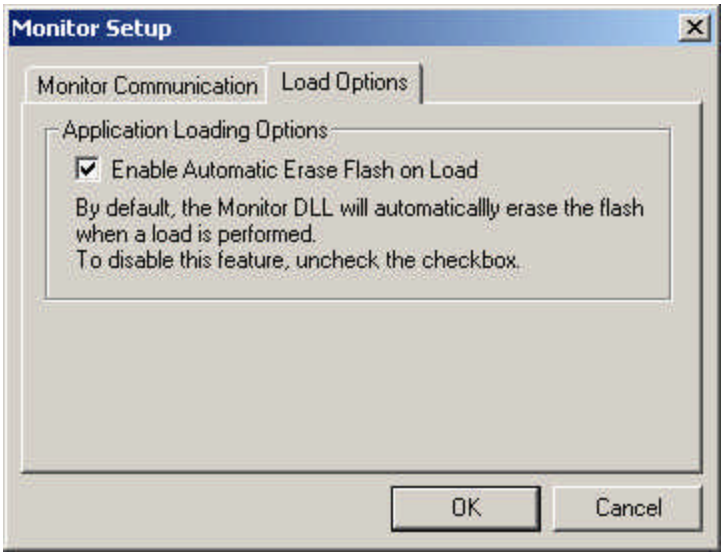
The next step is to setup erasing and programming. Click on **MONITOR-HCS12** menu, then select Communication… as shown.



Select the COM port that is available on your PC. In this example it is COM1

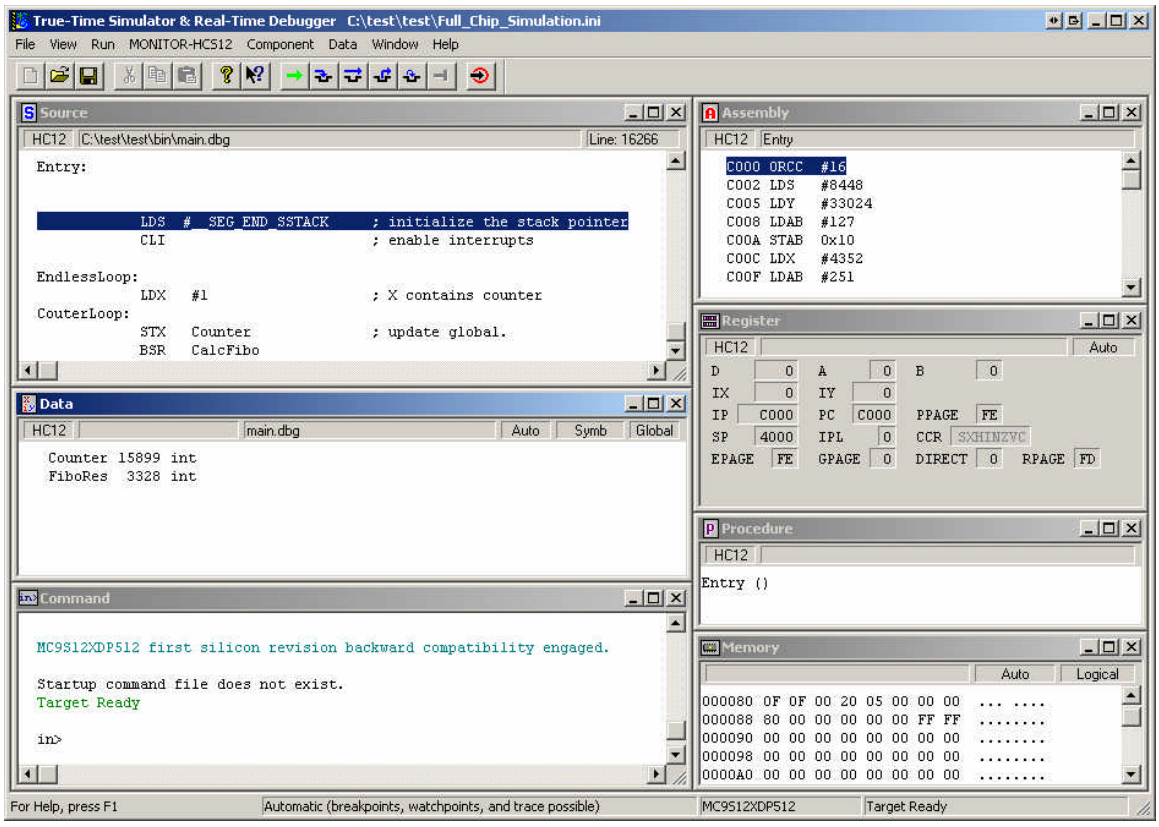


Next click on the Load Options tab as shown. Check the ***Enable Automatic Erase Flash on Load*** as shown.



Make sure the board's Run/Load switch is in the Load position. Then apply power, or press the RESET button on the module if it is already powered up. Press ***OK*** to continue.

The MCU will be erased then programmed. At the end of erase and programming the True time Sim will display the code, as shown.



This concludes the demonstration.