

CodeWarrior™ Development Studio for Microcontrollers Quick Start

SYSTEM REQUIREMENTS

Hardware	PC with 1 GHz Intel® Pentium®-compatible processor 512 MB of RAM (1 GB recommended) CD-ROM drive Depending on host-target connection: Parallel Port, 9-pin Serial Port, or USB Port
Operating System	Microsoft® Windows® 2000, Windows® XP, or Windows Vista™ Operating Systems 32 bit (Home Premium Edition and Business Edition)
Disk Space	2 GB total 400MB on Windows system disk

This Quick Start explains how to install the CodeWarrior Development Studio for Microcontrollers V6.2 software, and how to use the IDE to create, build, and debug a project.

Section A: Installing CodeWarrior Software

NOTE You must install the CodeWarrior software on the equipment on which you intend to use the software.

1. Insert CodeWarrior Development Studio CD into CD-ROM drive — CW Auto Install begins

NOTE If Auto Install does not start, run `launch.exe`, which is located in the root directory of the CD.

NOTE The CodeWarrior software may be part of a DVD included with your kit. In this case, click Install CodeWarrior Development Studio for Microcontrollers, follow the on-screen instructions, and skip to step "Check for updates".

2. Follow setup program's on-screen instructions

NOTE The Evaluation Edition license is automatically installed with your product and you do not need to register it. This license allows you to develop projects as Professional Edition within the 30-day evaluation period. After 30 days, the license works as Special Edition license (free permanent, but feature limited) which supports unlimited assembly code, up to 32KB of C code for HC(S)08/RS08 derivatives and up to 64KB of C code for ColdFire V1 derivatives.

NOTE For licensing and activation of your CodeWarrior Development Studio for Microcontrollers, refer to the *CodeWarrior Development Suite Quick Start*. Save the license file, `license.dat`, to the installation root folder. The default is `C:\Program Files\Freescale\CodeWarrior for Microcontrollers V6.2`

Section B: Creating and Building a Project

1. Create a project

- a. Select **Start > Programs > Freescale CodeWarrior > CW Microcontrollers V6.2 > CodeWarrior IDE** — IDE starts and displays startup dialog box

Startup Dialog Box



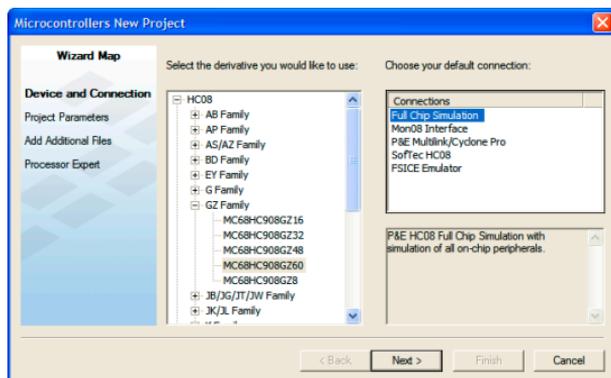
- b. Select **Create New Project** — Microcontrollers New Project **Device and Connection** dialog box appears

NOTE This section of the quick start demonstrates using the New Project Wizard. We use an MC68HC908GZ60 target as an example.

- c. Expand **HC08** and **GZ Family** and select **MC68HC908GZ60** derivative

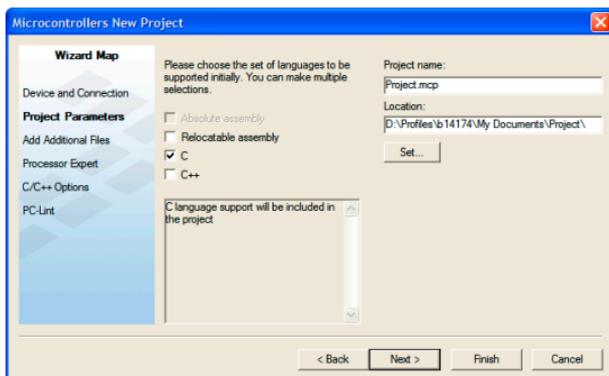
NOTE If your MCU is missing from the list, download a service pack for that device at <http://www.freescale.com/codewarrior/downloads>

Device and Connection Dialog Box



- d. Select **Full Chip Simulation** as your default connection
e. Click **Next** – **Project Parameters** dialog box appears

Project Parameters Dialog Box



- f. In **Project name** text box, the IDE supplies a default project name. Enter a project name of your choice.

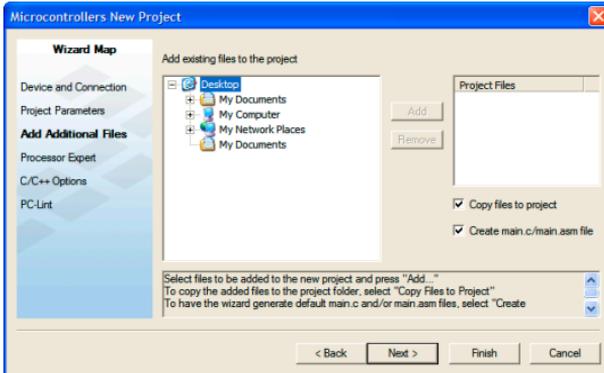
NOTE The IDE automatically creates a folder with the same name in specified location. The IDE automatically adds `.mcp` extension when it creates project.

- g. In **Location** text box enter location to store project, click **Set** to browse to folder location
- h. Select **C** as language to be supported by project

NOTE You can select Finish to accept defaults for remaining options

- i. Click **Next** — **Add Additional Files** dialog box appears
- This dialog box allows you to browse folders and add or remove files to or from the project.

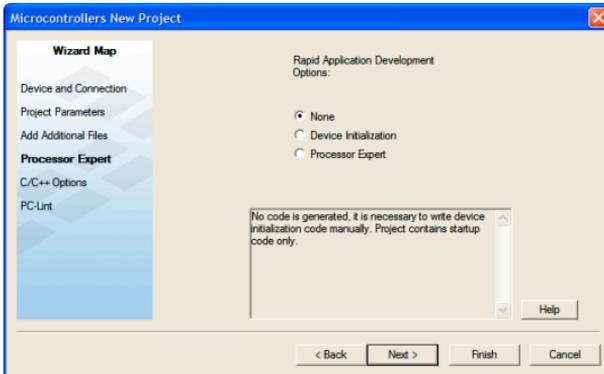
Add Additional Files Dialog Box



- j. Click **Next** — **Processor Expert** dialog box appears

This dialog box allows you to specify whether you want your project configured to use Device Initialization or Processor Expert

Processor Expert Dialog Box

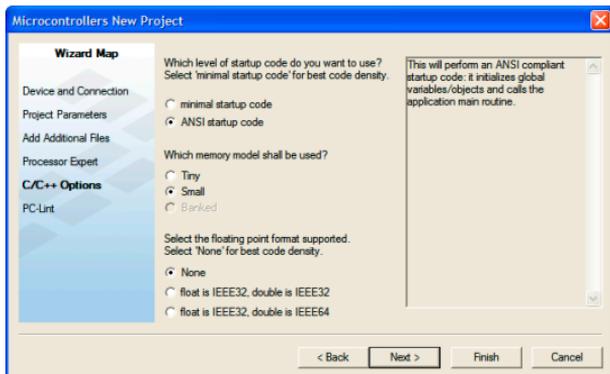


- k. Select **None**

- l. Click **Next** — **C/C++ Options** dialog box appears

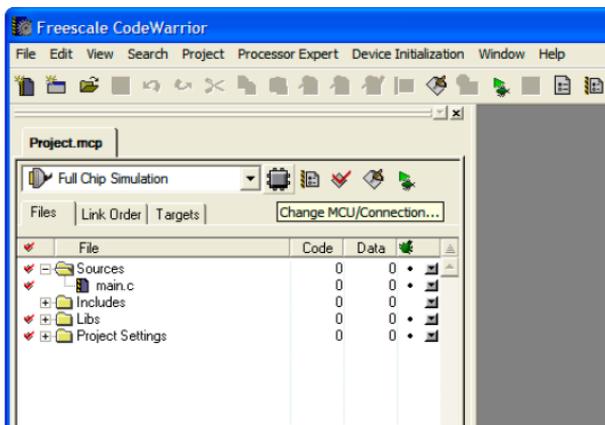
This dialog box allows you to specify C/C++ Options

C/C++ Options Dialog Box



- m. Select **ANSI startup code** as code, the New Project Wizard will place in your project as startup code
- n. Select **Small** as memory model to use
- o. Select **None** for floating point format to support
- p. Click **Finish** — IDE creates your project according to your specifications; Project window appears, docked at left side of main window

Project Window



NOTE To undock project window, double-click the double gray lines.
To re-dock window, right click in title tab and select **Docked**.

2. Select connection

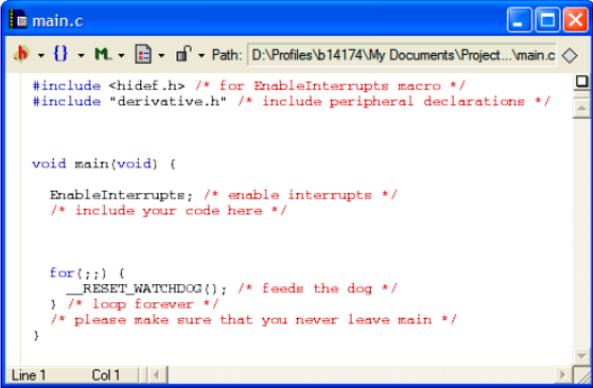
For this example, we specified Full Chip Simulation (FCS).

- a. Make sure Full Chip Simulation is selected in drop down list
- b. To change MCU and connection, click **MCU Change Wizard**

3. Edit source code

- a. Double click **main.c** in Sources folder – Editor window opens displaying contents of file

main.c in Editor Window



```
#include <hidef.h> /* for EnableInterrupts macro */
#include "derivative.h" /* include peripheral declarations */

void main(void) {
    EnableInterrupts; /* enable interrupts */
    /* include your code here */

    for(;;) {
        __RESET_WATCHDOG(); /* Feeds the dog */
    } /* loop forever */
    /* please make sure that you never leave main */
}
```

- b. Make changes to contents of `main.c` file, if desired
- c. If you make changes to file, from IDE main menu bar, select **File > Save** – IDE saves changes

4. Add files if appropriate

- a. In project window, highlight a folder
- b. From IDE main menu bar, select **Project**
- c. Select **Add Files** — dialog box appears
- d. Navigate to directory that contains file you want to add
- e. Select filename of file you want to add to project
- f. Click **Open** button — Project messages appear indicating access path has been added to target, if path is new to project
- g. In project window, filename of added file appears under selected folder

5. Build project

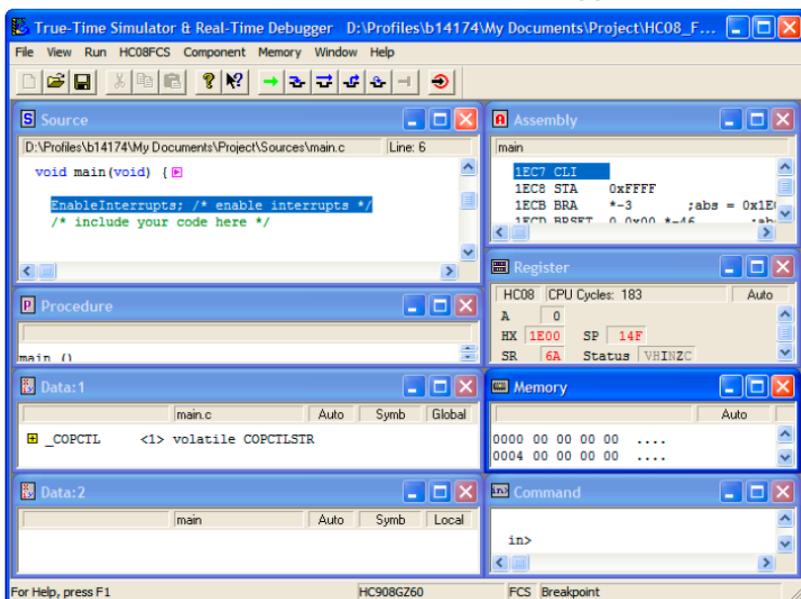
- a. From IDE main menu bar, select **Project**
- b. Select **Make** — IDE builds (assembles, compiles, and links) project; **Error & Warnings** window opens showing any error messages and warning messages

Section C: Debugging Your Application

1. Start debugger

- a. Click on project window title bar to ensures that window is active project
- b. From main menu bar, select **Project > Make**
- c. From main menu bar, select **Project > Debug — True-Time Simulator & Real-Time Debugger** window opens

True-Time Simulator & Real-Time Debugger Window



NOTE **Source** and **Assembly** panes display the `main.c` program and code.

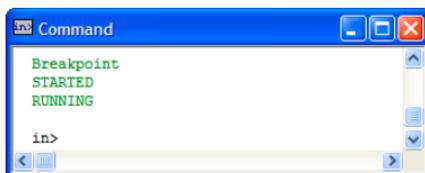
2. Set breakpoint

- a. Point at a C statement in **Source** window and right-click — Source context menu appears
- b. Select **Set Breakpoint** — Permanent breakpoint mark is set

3. Run application

- a. From the **True-Time Simulator & Real-Time Debugger** window, select **Run** — Run menu appears
- b. Select **Start/Continue** or click on **Start/Continue** icon  — Program executes till the first breakpoint; **Command** pane displays program status

Debugger Simulator Command Pane



4. Click **Start/Continue** icon  — Simulator resumes program execution
5. Click **Halt** icon  — Simulator stops program execution
6. From **Debugger Simulator Window** toolbar, select **File > Exit** to exit **Debugger**
7. From **IDE main Window** toolbar, select **File > Exit** to exit **CodeWarrior IDE**

Congratulations!

You have successfully created, built, and run an HC08 application with the CodeWarrior for Microcontrollers V6.2 software!

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