CodeWarrior™ Development Studio
for Motorola 68HC12/HCS12 Microcontrollers Quick Start

SYSTEM REQUIREMENTS	
Hardware	200 MHz Pentium® II processor or AMD-K6® class processor, 128 MB of RAM, and CD-ROM drive Depending on host-target connection: Parallel Port, 9-pin Serial Port, or USB Port
Operating System	Microsoft® Windows® 98/2000/XP/NT
Disk Space	Compact: 232 MB Full: 344 MB

This Quick Start explains how to install the CodeWarrior Development Studio for HC(S)12 V3.1 software, how to use the IDE to create a project, and how to start debugging a project.

Section A - Installing and Registering Software

1. Install CodeWarrior software

a. Insert **CodeWarrior for HC(S)12** 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.

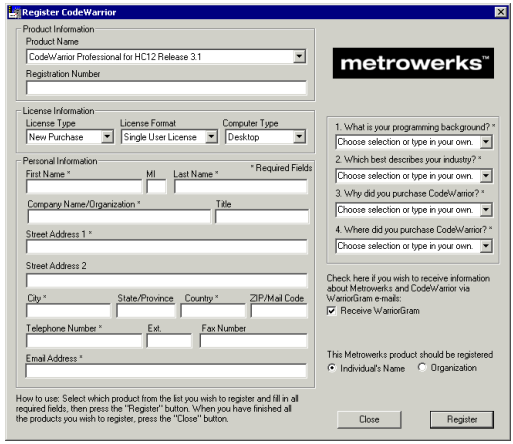
b. Follow setup program's on-screen instructions

2. Register CodeWarrior software

NOTE You can register the CodeWarrior software as part of the installation process. Alternatively, you can register the software after installation.

a. If **Register CodeWarrior** window is not open, from Windows desktop click **Start > Programs > Metrowerks CodeWarrior > CW12 V3.1 > Register CodeWarrior** — Register CodeWarrior Window appears

Register CodeWarrior window



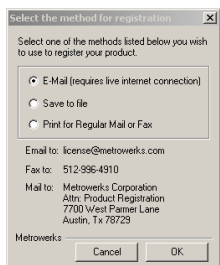
b. Select Professional, Standard, or Special edition from Product Name pull-down menu

c. Select New Purchase, Renewal, or Evaluation from License Type pull-down menu

d. Fill in all other fields of registration window

e. Click **Register** button — Registration Method dialog box appears

Registration Method dialog box



f. Select **E-Mail** option button

g. Click **OK** button — Registration Method dialog box closes; program sends information to Metrowerks; Metrowerks emails license key to you

NOTE In case of difficulty, run `MWRegister.exe`, which you can find in the Licensing directory. Email licensing questions to `license@metrowerks.com` or `license_europe@metrowerks.com`.
You can also e-mail your registration file. The registration file is a text file. The filename begins with MWRegistration. You can find the registration file in the following directory: {install_directory}/Other Metrowerks Tools/MWRegister/CW12_V3.1

h. Click **Close** button — Registration window closes

3. **Restart your computer — operating system reboots which ensures that CodeWarrior IDE finds newly installed drivers**

Section B - Installing CodeWarrior License Key

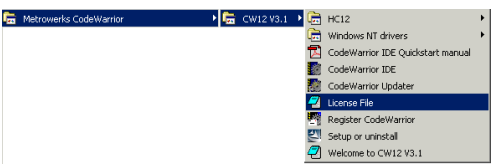
NOTE You receive a license key by e-mail after you register your product. You must place the key in the license file (`license.dat`) in order to use the CodeWarrior IDE.

1. **Open license file**

   a. Click **Start** > **Programs** > **Metrowerks CodeWarrior** > **CW12 V3.1** — menu appears

   b. Select **License File** — Notepad starts and opens `license.dat` file

License File from Start Menu



2. **Copy license key to new line at bottom of `license.dat` file**

NOTE If you are adding a license key for an upgrade, paste the new license key above the other keys in the license.dat file.

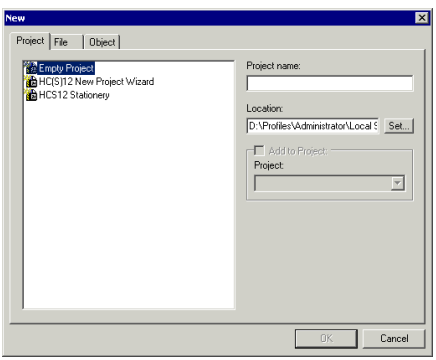
3. **Save** `license.dat` **file**
4. **Close** `license.dat` **file – license is installed; IDE uses new license when you start the CodeWarrior IDE**

NOTE Do not move or delete the `license.dat` file. If you receive additional keys in the future for other CodeWarrior components, you can add the additional keys to the `license.dat` file.

Section C - Creating And Building A Project

1. **Launch CodeWarrior IDE**
   a. Select **Start > Programs > Metrowerks CodeWarrior > CW12 V3.1** — menu appears
   b. Select **CodeWarrior IDE** — IDE starts, and CodeWarrior window appears
2. **From IDE main menu bar, select File > New – New window appears**

New window



3. Create new project

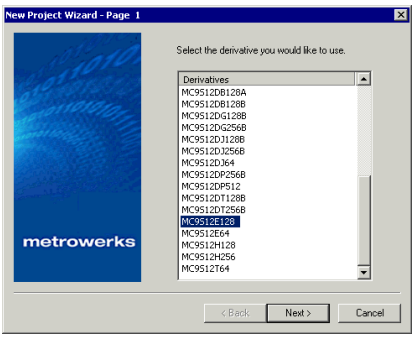
NOTE You can use the New Project Wizard to create a project, or you can use the HCS12 Stationery to create a project. This quick start shows you how to use the New Project Wizard. We use an MC9S12E128 target as an example.

a. Select **HC(S)12 New Project Wizard**

b. In **Project name** text box, type name you want to give project – IDE automatically adds `.mcp` extension when it creates project

c. Click **OK** button — first page of New Project Wizard appears

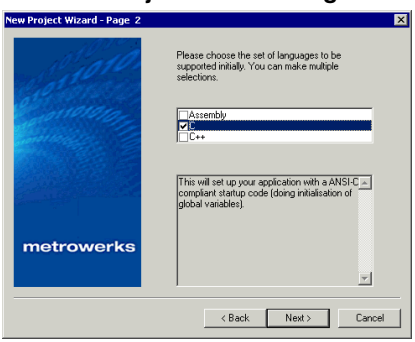
New Project Wizard - Page 1



d. Select **MC9S12E128**

e. Click **Next** button — Page 2 of New Project Wizard appears

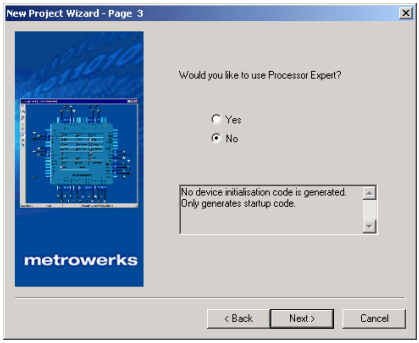
New Project Wizard - Page 2



f. Make sure **C** checkbox is marked

g. Click **Next** button — Page 3 of New Project Wizard appears; allows you to specify whether you want project configured to use Processor Expert

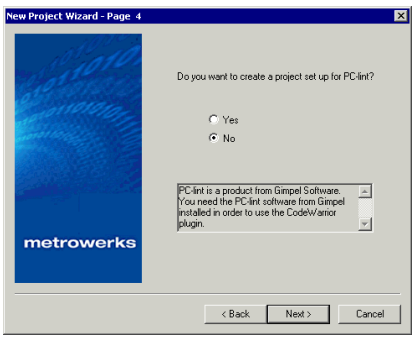
New Project Wizard - Page 3



h. Select **No**

i. Click **Next** button — Page 4 of New Project Wizard appears; allows you to specify whether you want project configured to work with PC-lint

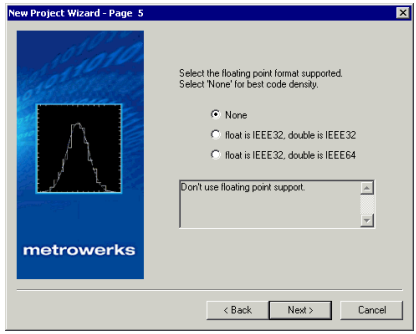
New Project Wizard - Page 4



j. Select **No**

k. Click **Next** button — Page 5 of New Project Wizard appears; allows you to specify floating point format that project should be configured to support

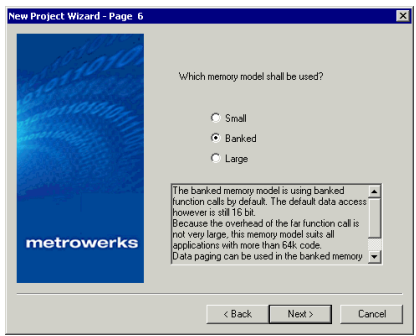
New Project Wizard - Page 5



l. Select **None**

m. Click **Next** button — Page 6 of New Project Wizard appears; allows you to specify memory model that project should be configured to support

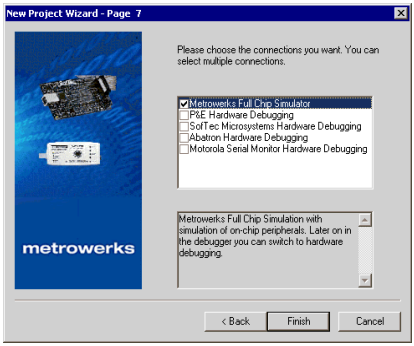
New Project Wizard - Page 6



n. Select **Banked**

o. Click **Next** button — Page 7 of New Project Wizard appears; allow you to specify connections that project should be configured to support

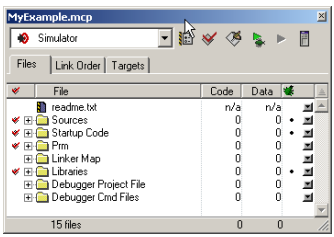
New Project Wizard - Page 7



p. Check **Metrowerks Full Chip Simulator** checkbox

q. Click **Finish** button — system creates new project based on information you specified in New Project Wizard; Project window appears, docked at left side of main window

Project Window



NOTE To undock Project window, double-click the docking handle (double gray lines at top of the Project window). To re-dock window, right click in title bar of Project Window, and select **Docked**.

4. Select build target

Your project can contain multiple build targets. For this example, we use the build target that connects to the Simulator.

a. Click drop-down menu of Project window

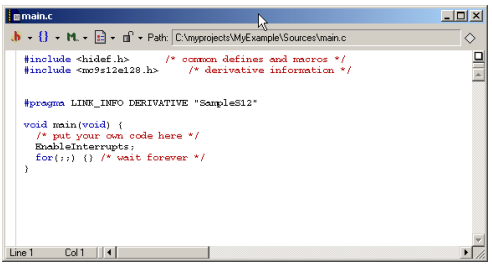
b. Select **Simulator**

5. **Edit source code**

   a. Click **+** sign next to `Sources` folder — tree expands

   b. Double click **main.c** – Editor window opens displaying contents of `main.c` file

`main.c` in Editor Window



   c. Make changes to contents of `main.c` file if desired

   d. If you make changes to `main.c` file, from IDE main menu bar, select **File > Save** – IDE saves changes

6. **Add files if appropriate**

   a. Highlight `Sources` folder

   b. From IDE main menu bar, select **Project** — menu appears

   c. Select **Add Files** — dialog box appears

   d. Navigate to directory that contains file you want to add

   e. Select (highlight) filename of file you want to add to project

   f. Click **Open** button — Add Files dialog box appears

   g. Check checkbox for each build target to which the file applies

   h. Click **OK** button — Add Files dialog box closes; in Project window, filename of added file appears under `Sources` folder

7. **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 error messages and warning messages if appropriate

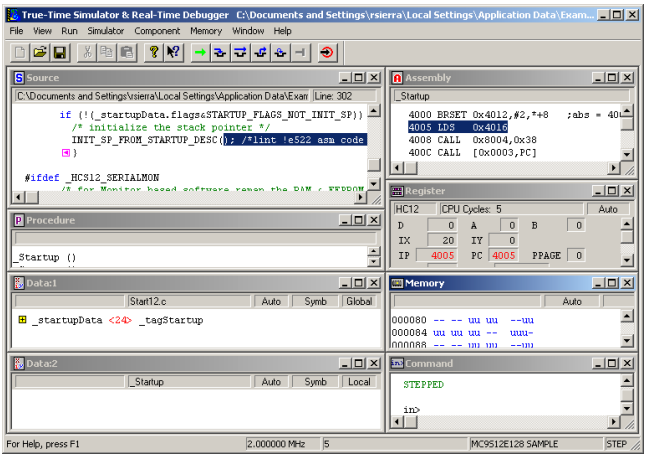
Section D - Debugging Your Application

1. **Start debugger**

   a. From main menu bar, select **Project**

   b. Select **Debug** — Debugger Simulator window opens

Debugger Simulator Window



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

2. **Right click mouse on executable line of source code in Source pane to set breakpoints in program code**

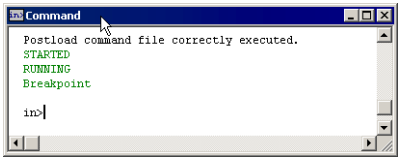
3. **Run application**

   a. From Debugger Simulator main menu, select Run – Run menu appears

   b. Select Start/Continue — program executes until encountering the first breakpoint; Command pane displays program status

NOTE Alternatively, you can click on Start/Continue icon

Debugger Simulator Command Pane



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

Congratulations!

You have successfully created, built, and run an HC12 application with the CodeWarrior for HC12 V3.1 software!

NOTES