

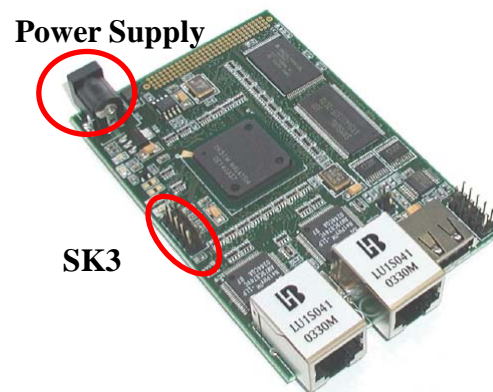
# Laboratory Guide

## 1 Connecting the wires

### 1.1 Connecting CABLEPPC cable

The experimental board communicates with the desktop PC with CABLEPPC cable. One end of the cable is connected to the PC parallel port (LPT1) and the other end is to the cable interface (SK3) on the board.

**Caution:** The red wire should be connected with Pin 1, the one with a square pad (see the back of the board).



### 1.2 Connecting the power supply

1. Before connecting the power cord, please place an insulator, e.g. a book, under the board.
2. Plug the adapter into a power strip with surge protection.
3. Make sure the switch on the power strip is off. Connect the power cord to the board.
4. Now turn the switch (on the power strip) on. A green LED on the board should be on and the board is ready for use.

### 1.3 Log in

Log in the Windows system with your user ID and password from the engineering school. The domain should be set to “ENGR\_STUDENT”.

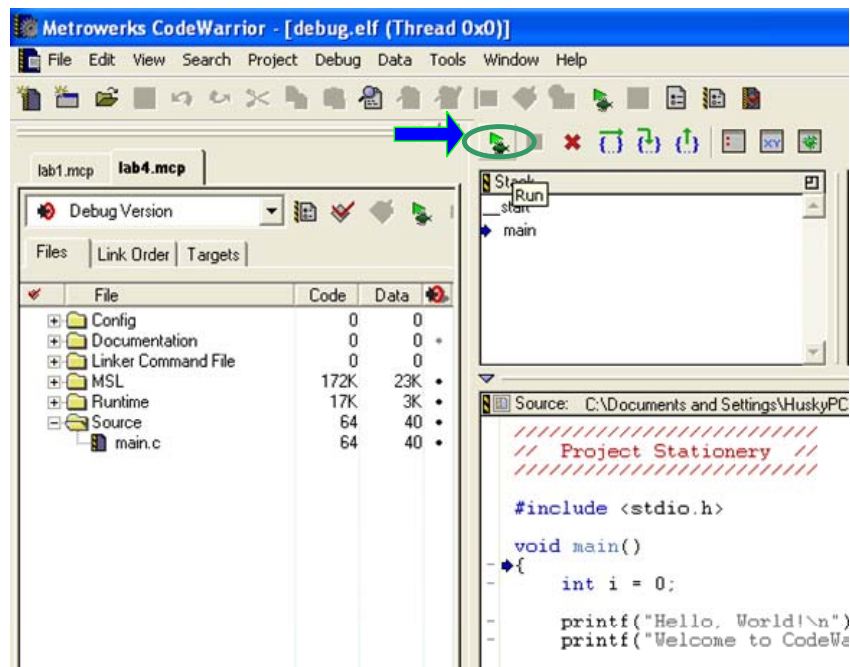
## 2 Working on your projects

### 2.1 Run the first project

1. You can download the sample project lab1.zip from the course's website.
2. Extract all the files into a working directory, e.g., "C:\Documents and Settings\{Your ID}\My Documents\lab1". You should be able to open a ZIP file with the built-in feature in Windows XP.
3. In the working directory you just created, find the project file lab1.mcp. Double click the file to start the CodeWarrior IDE.

You can launch CodeWarrior manually and then open lab1.mcp. To start CodeWarrior, click "Start/All Programs/Metrowerks CodeWarrior/CodeWarrior PPC ISA Comm. Processor Ed. V8.1/CodeWarrior IDE". After the IDE is started, select the menu "File/Open" (or press Ctrl+O) to open the project file.

4. Click the menu "Project/Make" (or press F7) to make the project.
5. Click the menu "Project/Debug" (or press F5) to load the code to the board and start the program in the debug mode.
6. Press the green arrow button to run the code (see the figure below). To see the output of the program, you need to switch to the console window by selecting "Window/STDIO Console". The sample code prints "Hello, World!" and "Welcome to CodeWarrior!"



There are many debug commands available, e.g., single step execution, step in, step over, set a break, etc. You can also inspect and watch the value of variables and registers. For example, “View/Registers” will show register values. Feel free to explore and get yourself familiar with these features. Taking a few minutes now to learn tools will save you a lot of time later.

If you select “Project/Run”, the code will run in the normal mode, which does not support the STDIO console window. Therefore, the STDIO functions like `printf` will not work (and you will not see “Hello, World!”).

7. To stop the program, select “Debug/Kill” (or Shift+F5). You may also want to close the STDIO console window so you will not get confused by two console windows next time you run the code.

### 3 Before you leave

Before you leave, you should back up your files. Copy them to your directory on the engineering school servers (and other *safe* places). Try to make two or three good copies. Then *delete your files on the lab computers*. Since the lab computers are shared by many students, your files on these computers are not safe; they may be deleted or modified. Moreover, other students may copy your code and reports. If the instructor, TA, or other students find your code or reports left on lab computers, your points for that project will be deducted by half.

Log off the Windows system. Turn off the switch on the power strip. And disconnect all the wires to the board.