

Introduction

This guide is intended to help you to get started quickly when using the EDK2378. It will cover how to:

1. Install the software tools
2. Build an executable file
3. Program the FLASH
4. Connect to the EDK and debug the file in HEW

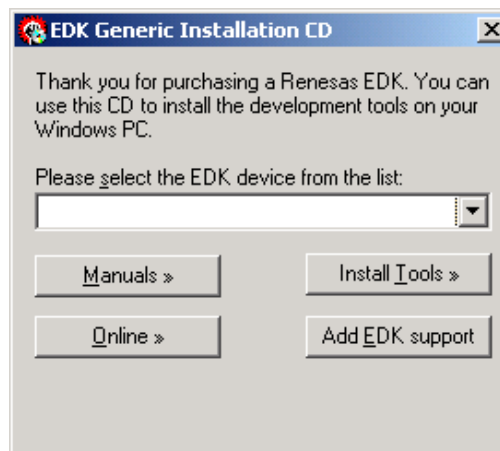
① Software Installation

Insert the EDK Software Tools CDROM in your drive, it should automatically run the menu program. If it does not:

- Open "**My Computer**" from your desktop
- Locate and open the CDROM drive
- Double-click the "**autorun.exe**" icon to run the program.

Once the menu program is running:

- Select H8S/2378 from the drop down list.
- The buttons suffixed with the '»' symbol will display a popup menu when clicked. The content above the separator in these menus changes dynamically, depending on the selected EDK device.
- If you do not have full versions of the Hitachi tools already installed, you should install the trial versions by clicking the "**Install Tools »**" button and complete the installations in the following order for:
 - 1) FDT 3.1
 - 2) HEW3
- Click the "**Add EDK Support**" to install the HEW project generator.



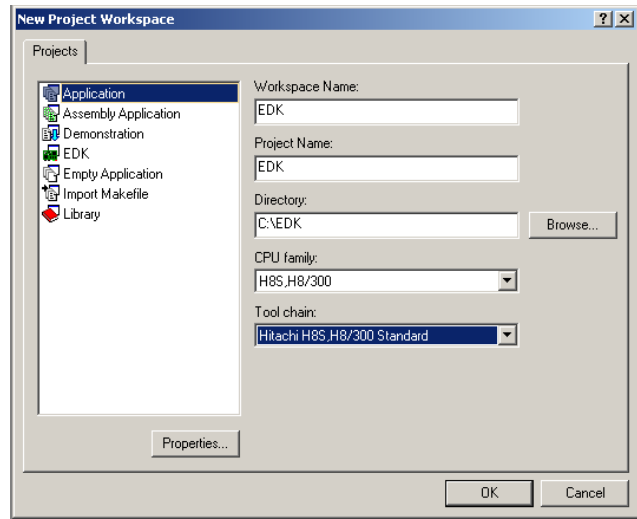
Documentation

The CD's menu program will automatically detect if you need to install the Acrobat Reader when you first select a PDF document from the Manuals popup menu. Alternatively, you may install Acrobat Reader manually from the CD's menu program by selecting "**Manuals »**", "**Acrobat Reader**".

② Generating a Test Project

Once you have installed the required software, you can quit the menu program and start High performance Embedded Workshop (HEW).

- Start HEW3 by using the Start Menu to navigate to and select "**High performance Embedded Workshop**".
- In the "**Welcome**" dialog box, select "**Create a new project workspace**" and click "**OK**".
- In the "**New Project Workspace**" dialog box, change the directory to a suitable location.
- Enter the Workspace Name, "**EDK2378**".
- Enter the Project Name, "**EDK2378**".
- Select the CPU Family for the EDK: "**H8S,H8/300**".
- Select the Toolchain: "**Hitachi H8S, H8/300 Standard**".
- Select the Project Type "**EDK2378**" for your EDK.
- Click "**OK**".



This will start the EDK Project Generator wizard, which will set up the correct environment for your EDK.

- When asked "**What type of project do you want to generate?**", select "**Tutorial**" and click "**Next >**".
- The list of project files to be included is displayed. Click "**Finish**".
- In the "**Project generator information**" dialog box, click "**OK**".

You will see a list of project files appear in the Workspace window, showing that the Project Generator has created the project for you.

Now build the tutorial program and integrated HMON monitor:

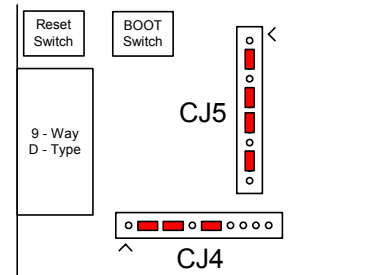
- Ensure that the project workspace is set to the following:



- Select the "**Build**", "**Build All**" menu item to build the program.
- When the build is complete, proceed to the next section to program your EDK with the project.

Before applying power to the board, please ensure that the jumpers fitted to CJ4 and CJ5 are set as follows (*Pin 1 is indicated by an arrow on the silk-screen*):

	PIN CONNECTIONS			
CJ4 (User Configuration)	2 – 3	5 – 6	7 – 8	Not Fitted
CJ5 (Mode Configuration)	2 – 3	5 – 6	7 – 8	10 – 11



Please refer to section 5 in the EDK User Manual for more information.

③ Programming the Board

- 1) Ensure that the EDK is connected to COM1, and power is applied.
- 2) Change to the debug session by choosing “**SessionH8S_2000_HMon**” from the drop down session menu.



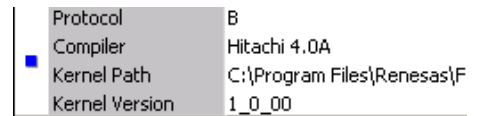
- 3) If prompted to save session, click “No”.
- 4) If the Flash Control Bar is not greyed out (as below), then FDT is configured. Go to step 7.



- 5) If the FLASH control bar is greyed out in this mode, with only the magic wand visible, then the FDT settings for the board need to be set up. The FDT configuration wizard will appear. Follow steps below to setup FDT.

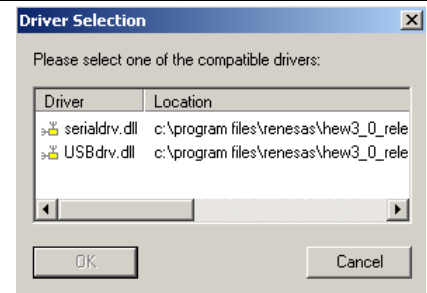


- a. Click on the wand to start the wizard. (It may start automatically)
- b. Select your device from the drop down menu.
- c. Click on the Kernels for your EDK. These are denoted by a .EDK after the version.
- d. Click the “Next” button



- 6) Choose “**Save Session**”, from the “**File**” menu.

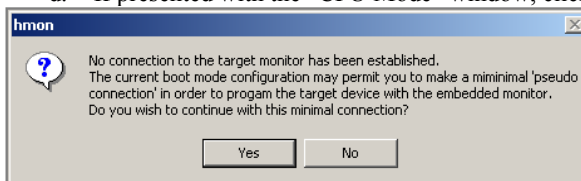
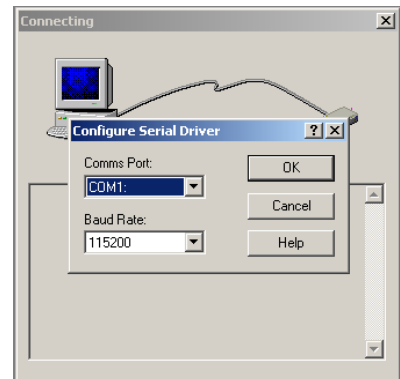
- 7) Click on the “**HMON FLASH Download Settings**” button



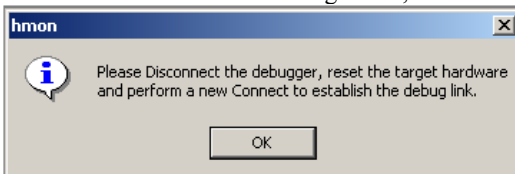
- 8) Click on the “**Boot**” radio button, and click “**OK**”.

- 9) Choose “**Save Session**”, from the “**File**” menu.

- 10) To connect to the EDK, press the connect icon .
 - a. If prompted for the “**Target Configuration**”, select the file from the list matching your EDK, and click “**OK**”.
 - b. If presented with the “**Driver Selection**” menu (above right), click on “**serialdrv.dll**” and then “**OK**”.
 - c. If presented with the “**Configure Serial Driver**” menu (right), click on “**Cancel**”. There is no monitor on the board for HEW to connect to, and so Hew will ask to make a minimal connection. Choose “**Yes**”, as this will allow you to download the file in boot mode to the device.
 - d. If presented with the “**CPU Mode**” window, click “**OK**”.



- 11) Right click on the “**.abs**” file in the “**Download Module**” section, and choose “**Download Module**”.
- 12) When the “**Please ensure that the device is in Boot mode**”, (right), dialogue prompts you, push the **BOOT** mode button on the EDK, and click “**OK**” in the dialogue.
- 13) Following completion of programming, a dialogue will appear prompting you to reset the EDK (below). Press the **RESET** button on the EDK. The **BOOT** LED will go OFF, Click “**OK**” on the dialogue.



- 14) Press the disconnect icon to disconnect from the EDK

④ Running the Debugger

The following procedure explains how to connect to the EDK2378 and debug the project in HEW.

The EDK uses HMON to connect to HEW and debugging is carried out in User Programming Mode. The User Program Mode jumper, marked **UPM** in **CJ4** on the silkscreen on the board, does not need to be moved during user programming. This is because there is no Flash write pin on the H8S/2378 device.

- Click on the HMON FLASH Download Setting button
- Click on the **USER** radio button
- Ensure that the “**uKernel Address**” is set to **H’1000**, and that the “**Referenced Value**” box is not checked. Ensure that the “**Return Address**” is set to **H’0**, and that the “**Referenced Value**” box is checked, and click “**OK**”
- Click “**Save Session**”, from the “**File**” menu.
- Click “**Build**”, “**Debug**”, “**Connect**”.
- The console window will report that the EDK has connected.
- Right click on the “.abs” file in the “**Download Module**” section, and choose “**Download Module**”.
- Double-click on the resetprg.c file in the HEW Project workspace window, under the “**C Source File**” folder.
- The C code listing will appear with a margin at the left showing the areas in memory where the code has been loaded.

- Click on the “**ResetCPU**” button

The Program Counter will go to the program start address, denoted by a yellow arrow.

```

0  →  _INITISCT();
4      HardwareSetup();
8      main();
      }
    
```

To run the program:

- Select the “**Debug**”, “**Reset Go**” menu item.
- Both the User LEDs on the EDK will start flashing.

Congratulations! You have installed the software; programmed the EDK and run your first program with the debugger. To continue learning about the tools and the board please read the EDK Tutorial Manual and supporting User Manuals

Kernel modification

A HEW EDK2378 kernel workspace containing user kernel source files and build configurations is provided on this CD. To recompile the 2378 kernels using this workspace for a different crystal frequency, please refer to the User Manual section 7.2 for details of the additional steps required.

Technical Support

The EDK is a tool for evaluation purposes only. Technical support is limited to that which is provided on the Renesas Technology Europe’s website at: <http://www.eu.renesas.com/tools>