Appendix C

Using Keil Micro-vision Software

Introduction

This manual helps you to get acquainted with the Keil software which will enable you to write the embedded C codes of different modules for interfacing them with the 8051 micro-controller. It also helps the students to get their hand on the compiling and analyzing the codes which they write. Thus it helps them to understand that how to test their codes.

If the system on which you are working does not has the Keil Micro Vision Software you can download it for free from the site www.keil.com.

The Micro-Vision IDE is a Windows-based software development platform that combines a robust editor, project manager, and makes facility. Micro-Vision integrates all tools including the C compiler, macro assembler, linker/locator, and HEX file generator. It helps expedite the development process of your embedded applications by providing the following:

- Full-featured source code editor,

- Device database for configuring the development tool setting,

- Project manager for creating and maintaining your projects,

- Integrated make facility for assembling, compiling, and linking your embedded applications,

- Dialogs for all development tool settings,

- True integrated source-level Debugger with high-speed CPU and peripheral simulator,

- Advanced GDI interface for software debugging in the target hardware and for connection to Keil ULINK,

- Flash programming utility for downloading the application program into Flash ROM,

- Links to development tools manuals, device datasheets & user's guides.

The Micro-Vision IDE offers numerous features and advantages that help you quickly and successfully develop embedded applications. They are easy to use and are guaranteed to help you achieve your design goals.

Procedure

In order to write, compile and convert your code to the corresponding hex codes you must build a project in the Keil Microvison software. The Steps for creating the project and converting the c code to the corresponding hex code are stated as-

1. First of all open the Keil software. When the window is invoked it will be like the figure as sown below.
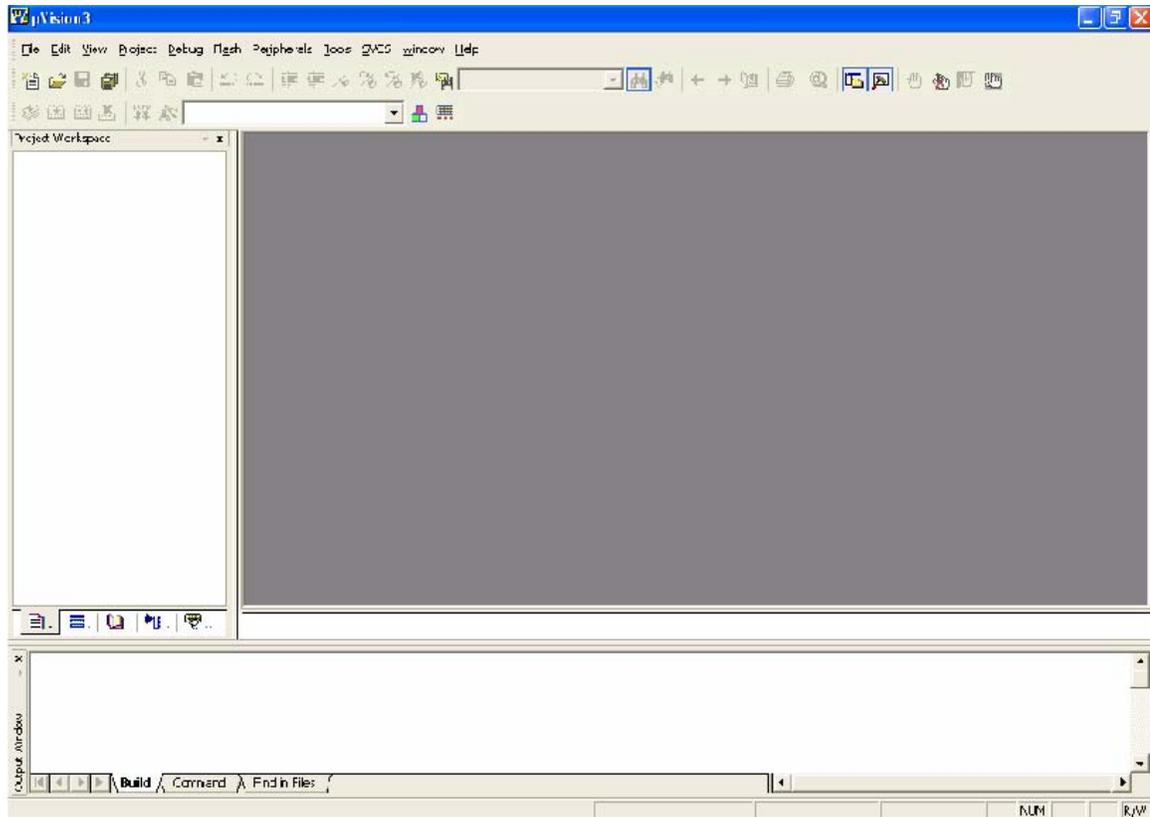

Figure 1: The work space window of keil

2. Then from the toolbar panel select the "Project" caption and select " New Project". Enter the directory where you want to store your current project and give an appropriate name to the project. The project will be saved with an extension of ".UV2".

3. Then another pop up window will appear as shown in Figure 2. This window allows you to select the target device. Here you have to select Atmel At89C51RC device.

4. After clicking on "OK" another pop-up will appear where it will be stated to " Copy the standard 8051 startup code to project folder and add File to project". You have select "YES" here.

5. Then the target will be created. Now right click on the Target caption. And select "add options to target". A window as shown in the Figure 3 will appear. In the Target caption window, check mark both "Use On chip ROM" and Use "On Chip XRAM" as shown.
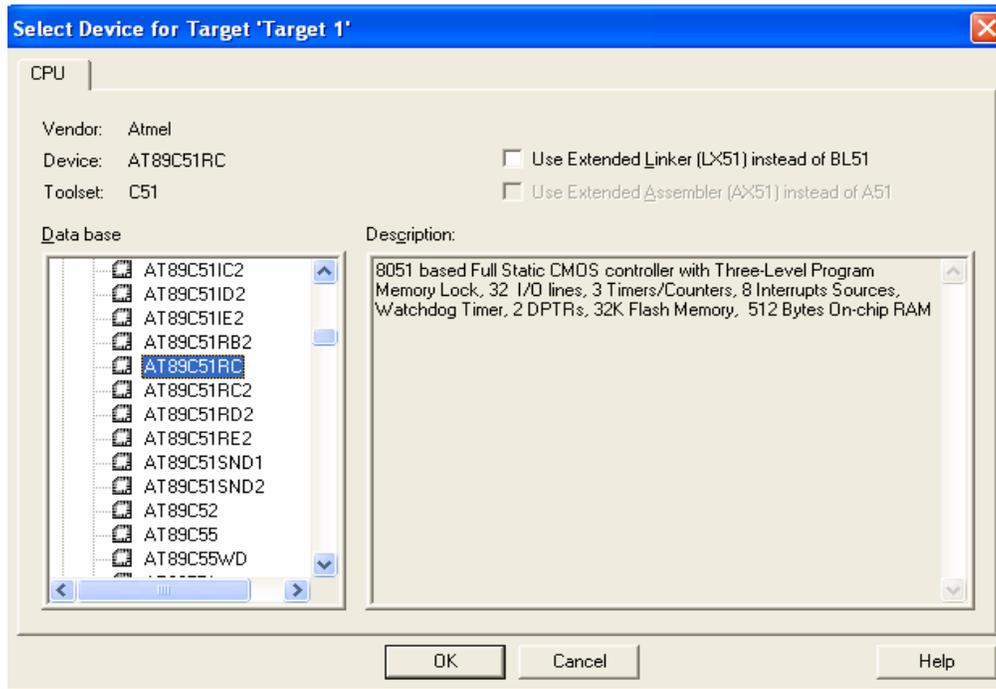
Figure 2: The target device window

6. Then select the Output caption and enable the "Create Hex file option" as is shown in Figure 4.
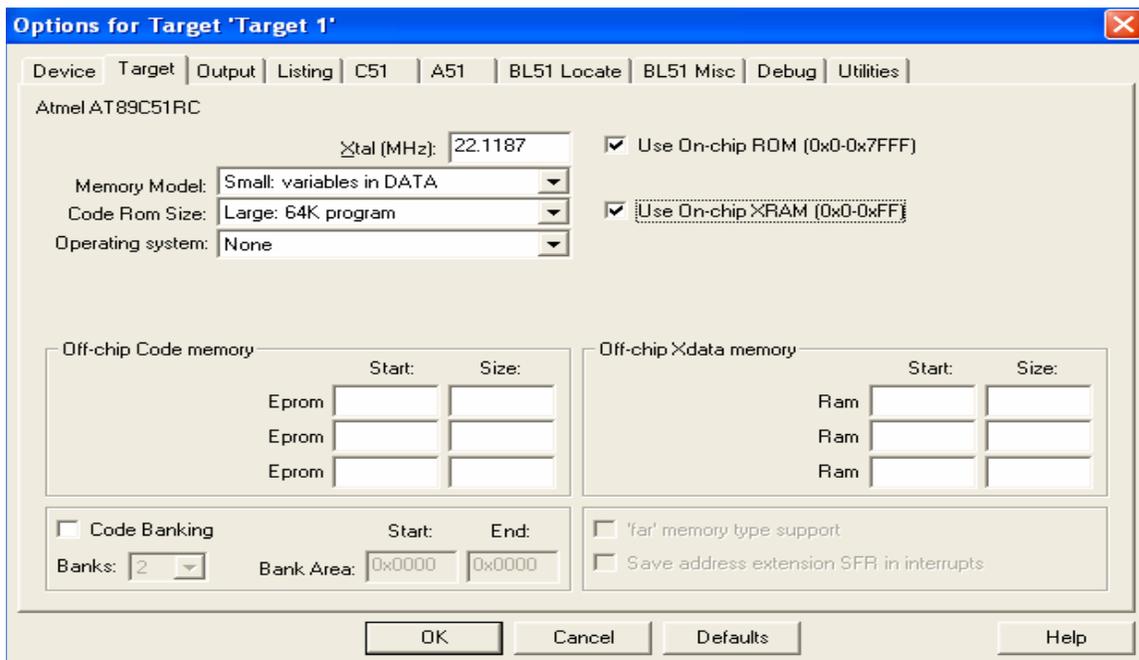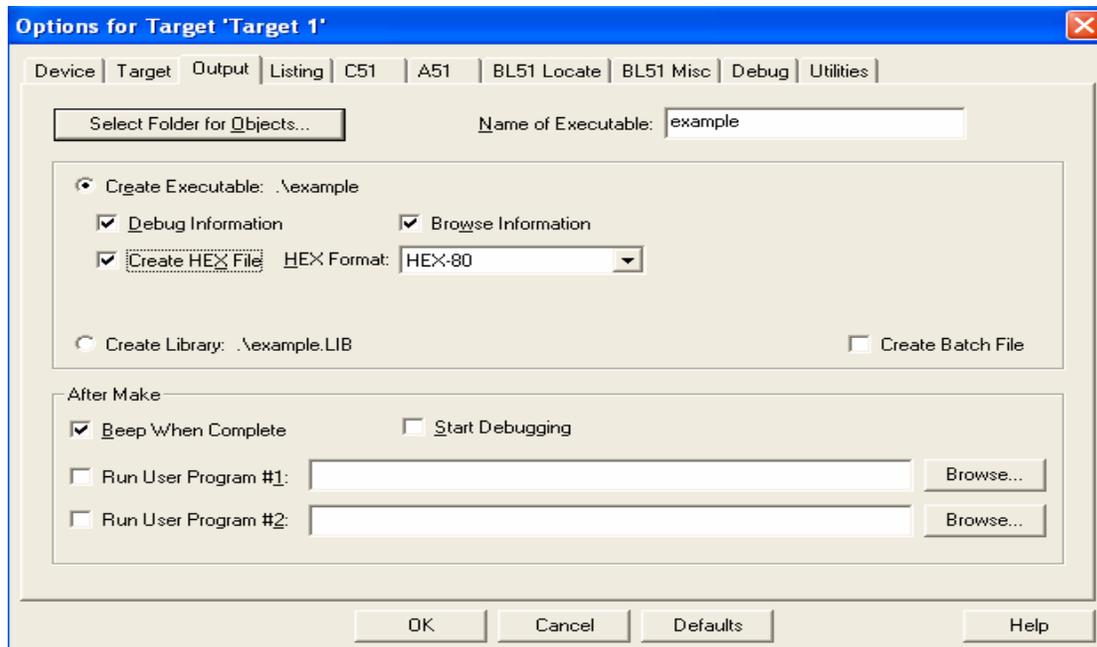

Figure 3: The Target caption

Figure 4: The Output caption

7. Then in the Listing caption enable the "Assembly code" option.

8. And finally in the BL51 Misc caption, enter 15,16 in the Warning text.

9. This will make your project ready and now you can add and create the C code required. This is done by clicking on "File>>New". A text editor window appears where you can write your own code and then save it with a ".C" extension. You can then include this file into your current project by right clicking on the "Source group" and then selecting "Add files to group" where you can then add your current file.

10. Once you have finished writing your code, you can compile the code by building the target by pressing the "F7" key.

11. Thus once your code and thus project are successfully compiled the corresponding HEX code will also be generated in the directory specified by you, where the project was stored.