Using MULTI®2000 V3.6 with the AT91 Library V2.1x

Introduction

The AT91 Library V2.1x is configured for use with Green Hills software MULTI®2000 V3.01. When any other version of MULTI®2000 is used, the project must be updated to ensure ARM UK assembly syntax compatibility.

This document describes the optimal settings when using MULTI®2000 V3.6 IDE to debug an application written using the AT91Library V2.1x on an AT91 ARM-based product evaluation board.

Setting the Target Project

1. Load the project. Make sure that all project files are displayed by double-clicking on project_name.bld.
2. If necessary, convert the target connection when opening the project:

AT91 ARM® Thumb® Microcontrollers

Application Note

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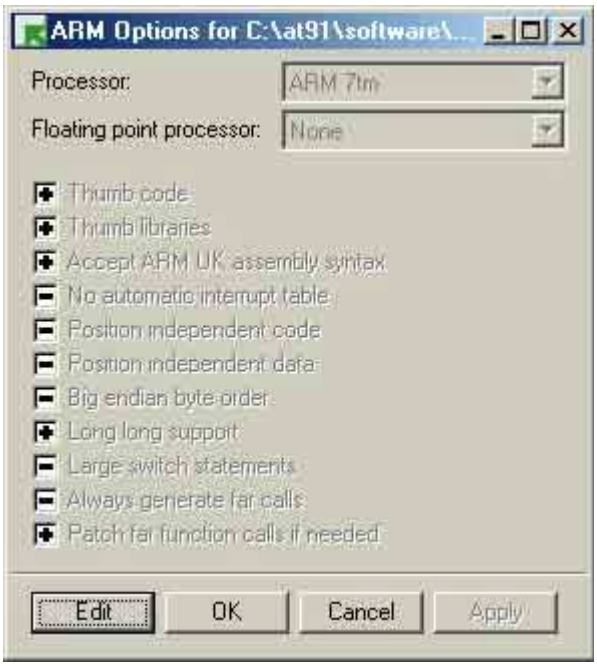
3. For this project and all un-built libraries included in this project, select the associated .bld file. Check the project ARM option:
   – Select “CPU Option” in the menu “Project”.
   – Enable the “Accept ARM UK assembly syntax” option by checking the box.



Setting Project Files

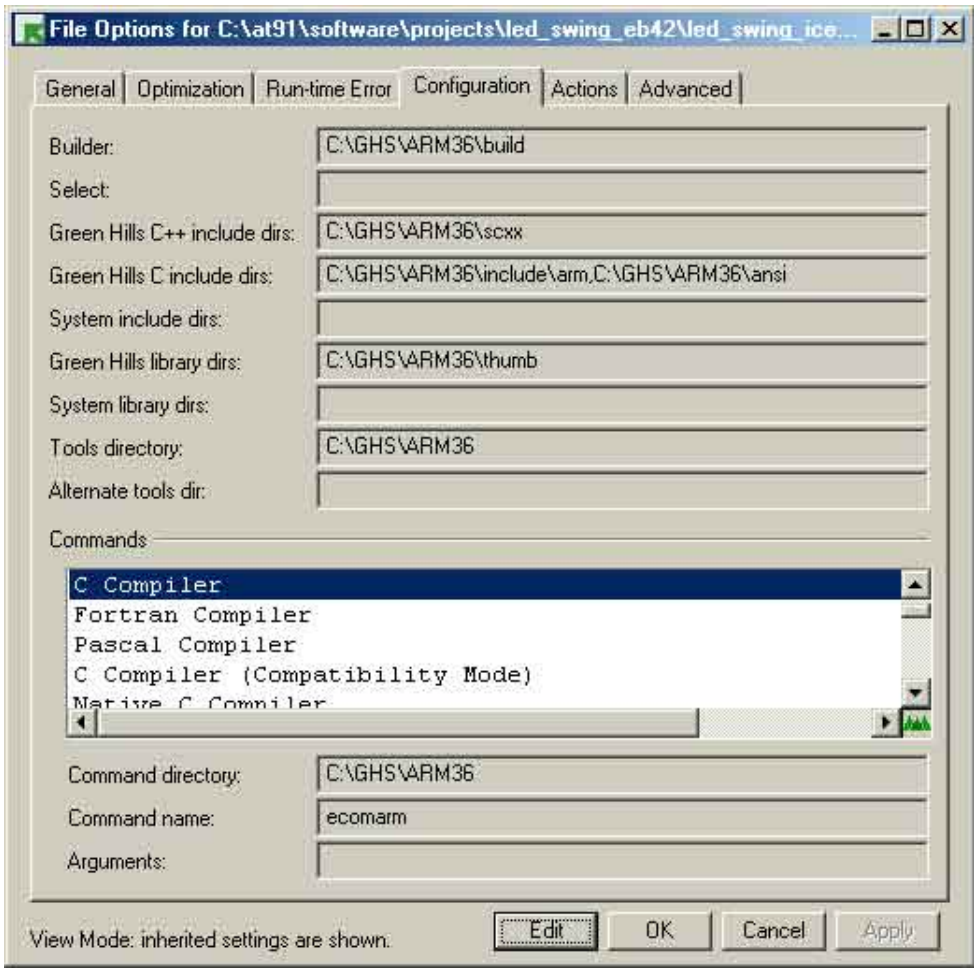
For this project and all un-built libraries included in this project, check the .c and .arm file build options using the File Option window:

1. Select the project (project_name.bld).
2. Select “File option” in the “Project” menu or by clicking the right mouse button.
3. Choose “Configuration”.
4. For .c and .arm files, check that:

– the C Compiler Command name is “ecomarm” and

– the C Compiler (Compatibility Mode) Command name is “ccomarm”.

To change, click “Edit”, make the change and click “Apply”. To view settings, click “View”.



5. Rebuild the project.

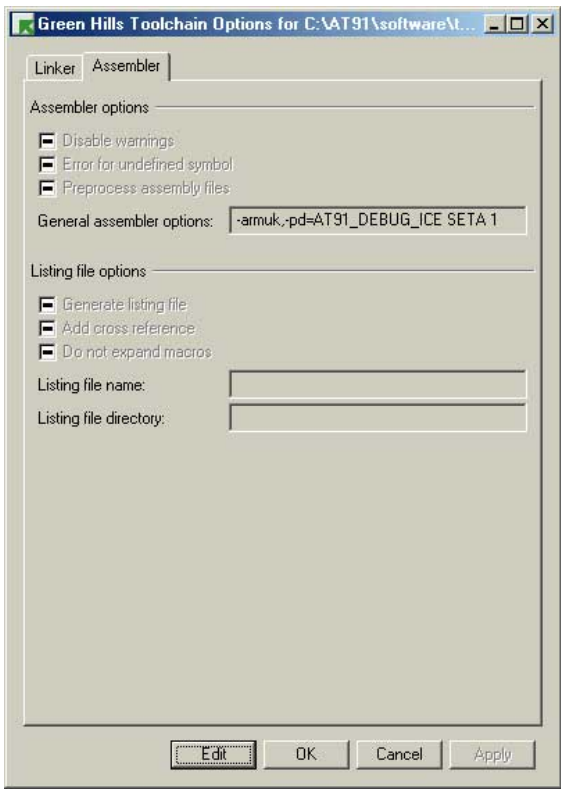
Setting the Application Project Toolchain Assembler

Update options depending on the download/execution method used:

- Angel ROM Monitor method
  - AT91_DEBUG_ANGEL
  - SEMIHOSTING preprocessor option can be set
- ICE or SRAM method
  - AT91_DEBUG_ICE
  - SEMIHOSTING preprocessor option can be set
- Flash method
  - AT91_DEBUG_NONE

To update the toolchain assembler:

1. Load the project. Make sure that all project files are displayed by double-clicking on the project_name.bld.
2. For each .arm file (including cstartup.arm), select the file and proceed to the next step (3). Do this for each .arm file prior to rebuilding the project in step (4).
3. In the menu “Project”, select “Toolchain Options for xx_file.arm”. Click on the tab “Assembler”.
   - In the “General assembler option” field, add the command “-armuk,-pd=AT91_DEBUG_xxx SETA 1”.
   - If the SEMIHOSTING preprocessor option is set, add the command “-pd=SEMIHOSTING SETA 1”.
     Be sure to separate the commands by a comma.



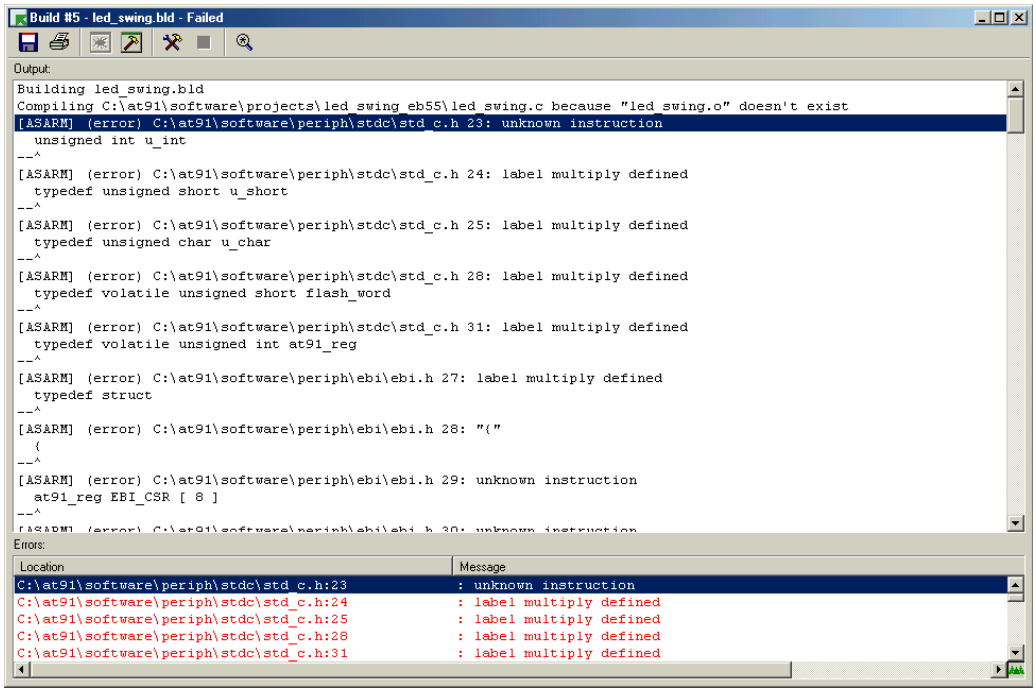
4. Rebuild the project
5. If a link error occurs on another .arm file, repeat the procedure starting at Step 2.

Note: When a configuration change is made, the project must be saved.

Troubleshooting

Error in Building the .c File

- Problem: Errors concerning “C” commands occur during compilation but the “C” commands are syntactically correct.
- Action: The project is configured to use the wrong compiler. Change the compiler selection as described in “Setting Project Files” on page 3.

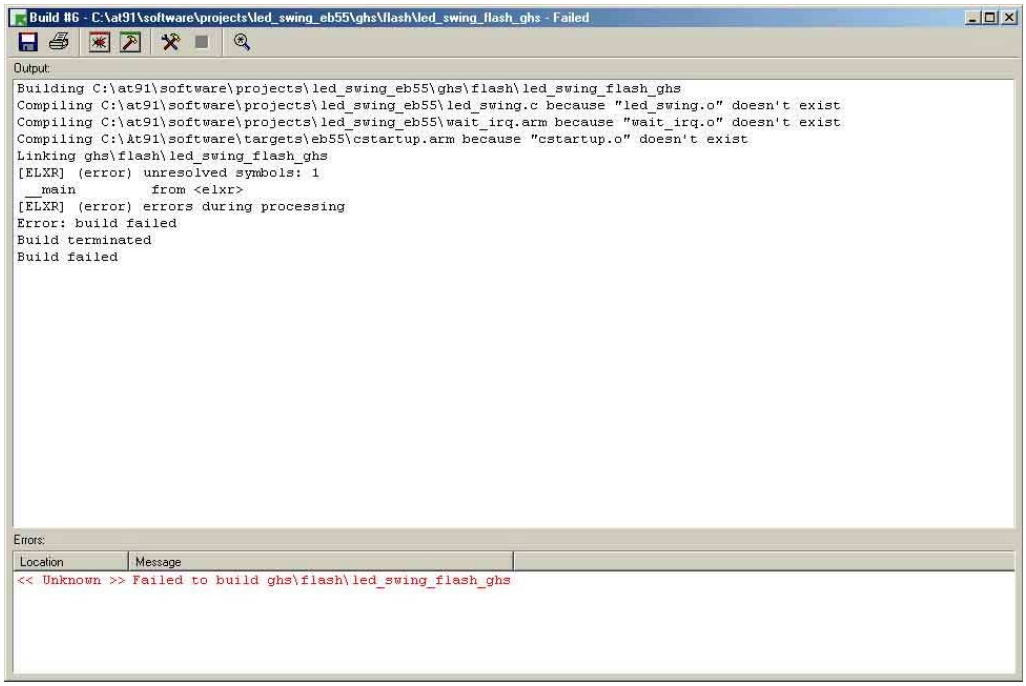


Link Error

- Problem: Link error occurs, but all files are built correctly:

```
Compiling C:\At91\software\targets\eb55\cstartup.arm because "cstartup.o"
doesn't exist
Linking ghs\sram_ice\<project name>.ghs
 [ELXR] (error) unresolved symbols: 1
__main            from <elxr>
 Linking ghs\sram_ice\<project name>.ghs
[ELXR] (error) during processing
Error: build failed
Build terminated
Build failed
```

- Action: Check the toolchain assembler option as described in “Setting the Application Project Toolchain Assembler” on page 4.



Error in Building the .arm File

- Problem: Errors occur during compilation of the .arm file.
- Action: Check the .arm file project compiler setting as described in “Setting the Application Project Toolchain Assembler” on page 4.

If the file compiler setting is correct, check the project CPU option setting as described in “Setting the Target Project” on page 1.

Failure to Save the Project

- Problem: MULTI®2000 does not save the user modification in the project file.
- Action: Close the project. Check that the project (.bld files) attributes are not in Read-Only mode and try to save the project again.

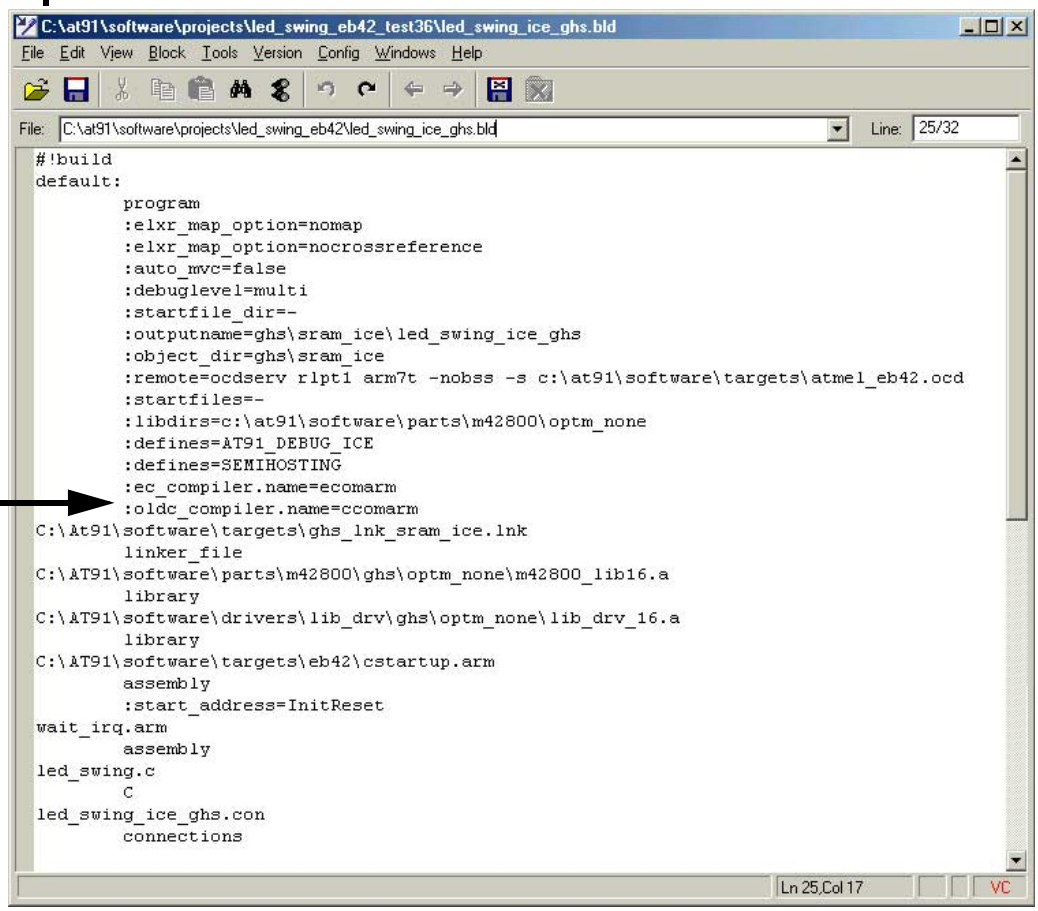
Appendix

Project files can also be set using the MULTI®2000 editor (cf. “Setting Project Files” on page 3). This method provides a linear view of project details.

In the root project, the same procedure must be applied for all child projects.

1. Select the project (project_name.bld).
2. Press CTRL-E.
3. The MULTI®2000 editor screen displays the project build file.
4. Erase all references to “ccomarmuk”.
5. For child projects only: Check that the .c and .arm files are built as follows, if their compilers are defined:

```
:ec_compiler.name=ecomarm
:oldc_compiler.name=ccomarm
```



6. Save and close the MULTI®2000 editor
7. Update the toolchain assembler as described in “Setting the Application Project Toolchain Assembler” on page 4 and rebuild the project.

Note: By using MULTI®2000 editor, the user can erase all references to “ec_compiler.name” and “oldc_compiler.name” in the root project and, later, in the child project.

Note: After editing and saving the build file using the text editor, MULTI®2000 detects that the file has changed and asks the user if the project should be reloaded. The user should respond with yes to ensure that future changes do not revert to “ccomarmuk” options.

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