

Kinetis Build Tools Options for Optimal Performance on the Cortex-M4 Core

1 Introduction

This document describes two sets of options and pragmas that can be used with the CodeWarrior tools for optimal performance on the Cortex-M4 Core. One set optimizes the execution speed; another set optimizes the size. You can use the build tools options and pragmas described in this document for optimal performance, but the build tools settings must be set according to the application being developed.

For more information on the Kinetis Compiler, refer to CodeWarrior Development Studio for Microcontrollers V10.x Kinetis Build Tools Reference Manual by Freescale.

2 Optimization for Speed

Following are the options for speed optimization:

- [Compiler Options](#)
- [Linker Options](#)

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2.1 Compiler Options

In order to reduce the overall cycle count of the code, pass the following options to the compiler:

```
-proc cortex-m4 -little -thumb -interworking -wchar_t on -enum min -char unsigned -Cpp_exceptions off -bool on -g -sym full -fp soft -lavender model=c9x -opt level=4,speed,alias_by_type -ipa program -inline on,auto,smart -noconstpool
```

2.2 Linker Options

In order to reduce the overall cycle count of the code, pass the following options to the linker:

```
-proc cortex-m4 -little -thumb -interworking -lstdc++_thumb_LE_v7M -lc99_thumb_LE_v7M -lrt_thumb_LE_v7M -lm_thumb_LE_v7M -lFP_flush0_thumb_LE_v7M.a -application -w on -g -sym full -stdlib -map -main __thumb_startup
```

3 Optimization for Size

Specific options direct the compiler and linker to optimize the generated code for smaller size. The following sections provide details on these strategies.

- [Compiler Options](#)
- [Linker Options](#)

3.1 Compiler Options

```
-proc cortex-m4 -little -thumb -interworking -wchar_t on -enum min -char unsigned -Cpp_exceptions off -bool on -g -sym full -fp soft -lavender model=c9x -opt level=4,space -ipa program -inline off -noconstpool
```

3.2 Linker Options

```
-proc cortex-m4 -little -thumb -interworking -lstdc++_thumb_LE_v7M -lc99_thumb_LE_v7M -lrt_thumb_LE_v7M -lm_thumb_LE_v7M -lFP_flush0_thumb_LE_v7M.a -application -w on -g -sym full -stdlib -map -main __thumb_startup
```

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