CMM-54415 - Software Quick Start

Software Development

Software development for the CMM-54415 board has been tested using the Codewarrior Development Studio for MCU version 10.6 or newer.

You can download the development tools here:
http://www.nxp.com/products/software-and-tools/software-development-tools/codewarrior-development-tools/codewarrior-development-studios/codewarrior-for-microcontrollers

Select the version for the Coldfire MCUs (not the V1 version) and download and install the software.

1. Run the Codewarrior Development Studio and select “New MQX 4.1 project” from the project creation options on the left. If you see a newer version of MQX use that instead.
2. Give your project a name, for example: hello. Select Next.
3. Select “Coldfire Evaluation Boards” and choose the TWRMCF54418 Board. The code and example projects for this board should run on the CMM-54415 board.
4. Select Next then Example Application, Basic Examples, hello.
5. Select Finish. This will create the example hello world project.
6. The default build is for external flash, you need to change this to external ram. From the Project Menu, select Build Configurations, Set Active, twrmcf54418_Ext_RAM_Debug.
7. To build the project, from the Project Menu select Build All.

You should now have a file called hello.elf.s19 (or your_project_name.elf.s19). This is located in your project directory under the sub directory:

\hello\twrmcf54418_Ext_RAM_Debug\

This file, hello.elf.s19 is the executable code that you can run on the CMM-54415 board. The following section will show you how to program it into the boards flash so it will execute from external ram every time the board starts.

Software Programming

This example project will output the string “Hello World” to the serial port. It runs from high speed external RAM on the CMM-54415 board.

You can load and debug it using a BDM cable connected to the board. You can easily program it into flash with just a serial cable using the bootloader built into the board.

Use the following steps to program and execute it from your board.

1. If your PC doesn't have a serial COM port you'll need a USB to Serial cable adapter. Connect the serial cable or adapter to your PC.
2. Connect the other end of the serial cable to the DB9 connector (J5_COM) on the development board.
3. Open a serial Terminal program on your pc. If using windows, HyperTerm will work or you can download a better free terminal here: https://www.ayera.com/teraterm
4. Set the terminal baud rate to 115200 baud, N81.
5. Make sure the JP1: **PRG** jumper is installed to put the board in program mode.
6. Connect a 9 or 12V DC power adapter to the board. This will power on the board and you should see the following text menu in the terminal

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Main Menu
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R) Flash Erase
F) Firmware Upload
M) Memory Tools
T) Test

e) Exit

Select:
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7. Choose F) Firmware Upload.
8. This will erase the current application and program a new one. Select Y to proceed.
9. Upload a your executable file in Motorola Hex format (.s19). For example, the hello.elf.s19 file you created from the previous section. If using TeraTerm you can do this by selecting the File menu and choosing Send File..
10. While the file is uploading you will see dots quickly moving across the terminal screen as it loads your program into external RAM.

11. When this is finished you'll see: "Erasing and Programming Application Flash...." and this time the dots will move across the terminal more slowly as the bootloader is offset programming your application into flash memory. This could take a couple minutes.
12. When this is finishes, remove power from the board and remove the PRG jumper to take the board out of program mode.
13. When you re-apply power to the board, the bootloader will copy your program from flash to external RAM and execute it. If you programmed the hello world example program, you should see the string "Hello World" repeated over and over again on the terminal screen.

You can build and program the other example programs using these same procedures.