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## problem with EKC-LM3S9B90 and freeRTOS

Posted by circle - 2009/06/26 09:34

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Hi

I've the EKC-LM3S9B90 evaluation board and have successfully installed and run the bundled sample programs. I have followed the tutorial on the freeRTOS site. However when I try and start the openocd programmer in eclipse I get the following error:

Info: openocd.c:92 main(): Open On-Chip Debugger (2007-08-17 11:00 CEST)

Error: ft2232.c:1341 ft2232\_init\_ftd2xx(): unable to open ftdi device: 2

Error: ft2232.c:1356 ft2232\_init\_ftd2xx(): ListDevices: 2

Error: ft2232.c:1358 ft2232\_init\_ftd2xx(): 0: Luminary Micro ICDI Board A

Error: ft2232.c:1358 ft2232\_init\_ftd2xx(): 1: Luminary Micro ICDI Board B

Does anyone know how to build the freeRTOS for my board? I really appreciate any help!

Post edited by: circle, at: 2009/06/26 09:59

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## Re:problem with EKC-LM3S9B90 and freeRTOS

Posted by TI Brian - 2009/06/26 12:42

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OpenOCD is telling you that it can not find the board that you've specified in your openocd.cfg, but that it has found "Luminary Micro ICDI Board" instead. The FreeRTOS tutorial is based on an older evaluation board which has a different name and also a different USB VID/PID.

Use the following in your openocd.cfg:

```
ft2232_device_desc "Luminary Micro ICDI Board"
```

```
ft2232_vid_pid 0x0403 0xbcda
```

If this does not work, use "Luminary Micro ICDI Board A" instead.

Note that your mileage may vary on this; I use OpenOCD revision 555, but the command syntax has changed in newer versions. From the "Info:" line you've provided, I'm guessing that you're using an even older version that I have so the above commands should be fine.

--Brian

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## Re:problem with EKC-LM3S9B90 and freeRTOS

Posted by circle - 2009/06/26 13:39

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Hi

Thanks for your reply!

I can't find any file named openocd.cfg however I guess that the files "fury\_ft2232.cfg" & "fury\_ft2232\_flash.cfg" are the files to change. They are basically the same with only minor differences, this is my "fury\_ft2232.cfg" before I changed it:

```
#daemon configuration
```

```
telnet_port 4444
```

```
gdb_port 3333
```

```
#interface
```

```
interface ft2232
```

```
ft2232_device_desc "Stellaris Evaluation Board A"
```

```
ft2232_layout evb_lm3s811
```

```
ft2232_vid_pid 0x0403 0xbcd9
```

```
jtag_speed 40
```

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```
#LM3S811 Evaluation Board has only srst
reset_config srst_only separate
```

```
#jtag scan chain
#format L IRC IRCM IDCODE (Length, IR Capture, IR Capture Mask, IDCODE)
jtag_device 4 0x1 0xf 0xe
```

```
#target configuration
daemon_startup attach
#target <type> <startup mode>
#target arm7tdmi <reset mode> <chainpos> <endianness> <variant>
target cortex_m3 little run_and_halt 0
# 4k working area at base of ram
working_area 0 0x20000800 0x1200 nobackup
#target_script 0 reset ../doc/scripts/evb_lm3s811_test.script
```

```
#flash configuration
flash bank stellaris 0 0 0 0 0
```

and after I changed it:

```
#daemon configuration
telnet_port 4444
gdb_port 3333
```

```
#interface
interface ft2232
ft2232_device_desc "Luminary Micro ICDI Board"
ft2232_vid_pid 0x0403 0xbcda
jtag_speed 40
#LM3S811 Evaluation Board has only srst
reset_config srst_only separate
```

```
#jtag scan chain
#format L IRC IRCM IDCODE (Length, IR Capture, IR Capture Mask, IDCODE)
jtag_device 4 0x1 0xf 0xe
```

```
#target configuration
daemon_startup attach
#target <type> <startup mode>
#target arm7tdmi <reset mode> <chainpos> <endianness> <variant>
target cortex_m3 little run_and_halt 0
# 4k working area at base of ram
working_area 0 0x20000800 0x1200 nobackup
#target_script 0 reset ../doc/scripts/evb_lm3s811_test.script
```

```
#flash configuration
flash bank stellaris 0 0 0 0 0
```

With the changes above to the 2 files I get the following error:

```
Info: openocd.c:92 main(): Open On-Chip Debugger (2007-08-17 11:00 CEST)
Error: jtag.c:1253 jtag_examine_chain(): JTAG communication failure, check connection, JTAG interface, target power
etc.
Error: jtag.c:1440 jtag_init(): trying to validate configured JTAG chain anyway...
Error: jtag.c:1346 jtag_validate_chain(): Error validating JTAG scan chain, IR mismatch, scan returned 0x3f
Error: jtag.c:1346 jtag_validate_chain(): Error validating JTAG scan chain, IR mismatch, scan returned 0x3f
Error: jtag.c:1346 jtag_validate_chain(): Error validating JTAG scan chain, IR mismatch, scan returned 0x3f
Error: jtag.c:1346 jtag_validate_chain(): Error validating JTAG scan chain, IR mismatch, scan returned 0x3f
Error: jtag.c:1346 jtag_validate_chain(): Error validating JTAG scan chain, IR mismatch, scan returned 0x3f
Error: jtag.c:1346 jtag_validate_chain(): Error validating JTAG scan chain, IR mismatch, scan returned 0x3f
Error: jtag.c:1448 jtag_init(): Could not validate JTAG chain, exit
```

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Any idea what can be wrong, thanks again for your input.

Post edited by: circle, at: 2009/06/26 13:41

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## Re:problem with EKC-LM3S9B90 and freeRTOS

Posted by circle - 2009/07/01 13:23

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Hi

I would greatly appreciate this problem to be solved.

One of the incentives to purchase the EKC-LM3S9B90 for me was that it could run freeRTOS as specified by its product page at Luminary micro. As this is currently not the case I believe that Luminary owes its consumers that it posts an updated version of the freeRTOS download at the EKC-LM3S9B90 product page. Instead of just cut and paste some old download and hope that it works.

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## Re:problem with EKC-LM3S9B90 and freeRTOS

Posted by TI Jon - 2009/07/01 13:52

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Hi circle,

Sorry to hear that you're still having trouble. I'm having some trouble following your recent posts. Remember that OpenOCD and freeRTOS are not the same thing.

We do have people here that are familiar with using OpenOCD as a debugger but it is not one of our mainstream tools.

freeRTOS and examples can be used with with any of the tools chains that we support – you don't have to use OpenOCD.

So could you clarify the exact problem you're seeing? It sounds like it's nothing specific to freeRTOS, but is a general configuration issue with OpenOCD.

-- Jon

Post edited by: TI Jon, at: 2009/07/01 16:34

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## Re:problem with EKC-LM3S9B90 and freeRTOS

Posted by dbrownell - 2009/08/15 09:23

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First thing: try the current version of OpenOCD. That would be the 0.2.0 code from last month; or maybe even the latest from SVN.

Code from two years ago is unlikely to work very well with Cortex-M3 parts from anyone.

I know the latest code has config files for the ICDI and 9B9x eval boards, plus other Coretex updates.

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## Re:problem with EKC-LM3S9B90 and freeRTOS

Posted by tim124 - 2009/08/19 18:18

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I too am having issues with a LM3S9B92 dev board and freeRTOS.

Firstly from what I can see the freeRTOS demo code wont run 'out of the box' on the LM3S9Bxx dev boards. For starters, the crystal speeds are different (16M vs 8M) and the driverlib included with the freeRTOS demo doesnt even have the definitions for speeds over 8Mhz.

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Secondly, I found that after flashing the unmodified freeRTOS demo onto my dev board I could no longer even program the examples onto it. It just reported that the board wasn't even there. I emailed support and they told me about a newly discovered errata for the LM3S9B's and a method to unlock the device (detailed at the end of this post).

LMI should either remove the freeRTOS demos from the LM3S9B pages or update them so as not to cause this issue!

To Unlock:

Power cycle the board and run the debug port unlock procedure in LM Flash Programmer. DO NOT power cycle when LM Flash Programmer tells you to

Go to the Flash Utilities tab in LM Flash Programmer and do a mass erase operation (check "Entire Flash" and then click the Erase button). This erase appears to have failed, but that is ok

Power cycle the board

Go to the Flash Utilities tab in LM Flash Programmer and do another mass erase operation (check "Entire Flash" and then click the Erase button)

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