UCD3138

JTAG Configuration

Using CCS 6

TI NDA Preliminary Document

October 6 2014

Before attempting to connect through JTAG:

1) Be aware that the ROM in the current version of UCD3138(32K version) sets the value of the *Bitfield* `MiscAnalogRegs.IOMUX.bit.JTAG_CLK_MUX_SEL == 2; ,` in other words when in ROM mode, JTAG is disabled as default.
In order to enable JTAG, set the value of the above bit-field to zero through the PMBus "Device GUI"'s Memory Debugger.
The revised device UCD3138A will have JTAG enabled by default when operating in ROM mode.

2) Make sure that in the downloaded firmware JTAG related IOMUX bits are set to zero.

```
MiscAnalogRegs.IOMUX.bit.JTAG_CLK_MUX_SEL == 0;
MiscAnalogRegs.IOMUX.bit.JTAG_DATA_MUX_SEL == 0;
```

3) Make sure that none of the JTAG pins are assigned as GPIOS using the Global IO settings:

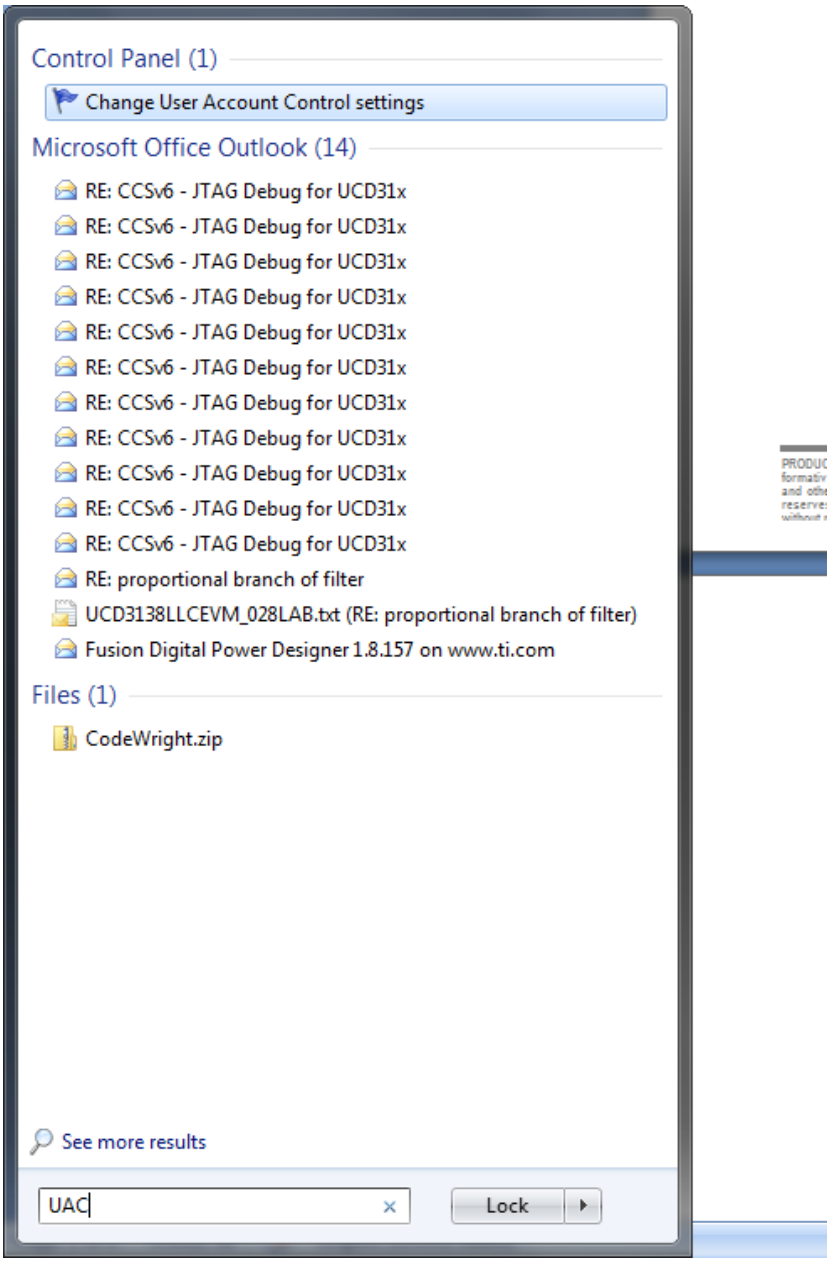
```
MiscAnalogRegs.GLBIOEN.bit.TCK_IO_EN = 0;
MiscAnalogRegs.GLBIOEN.bit.TDI_IO_EN = 0;
MiscAnalogRegs.GLBIOEN.bit.TDO_IO_EN = 0;
MiscAnalogRegs.GLBIOEN.bit.TMS_IO_EN = 0;
```

Both 2) and 3) statements may be placed in the init_gpio() function that is typically located in gpio.c file.

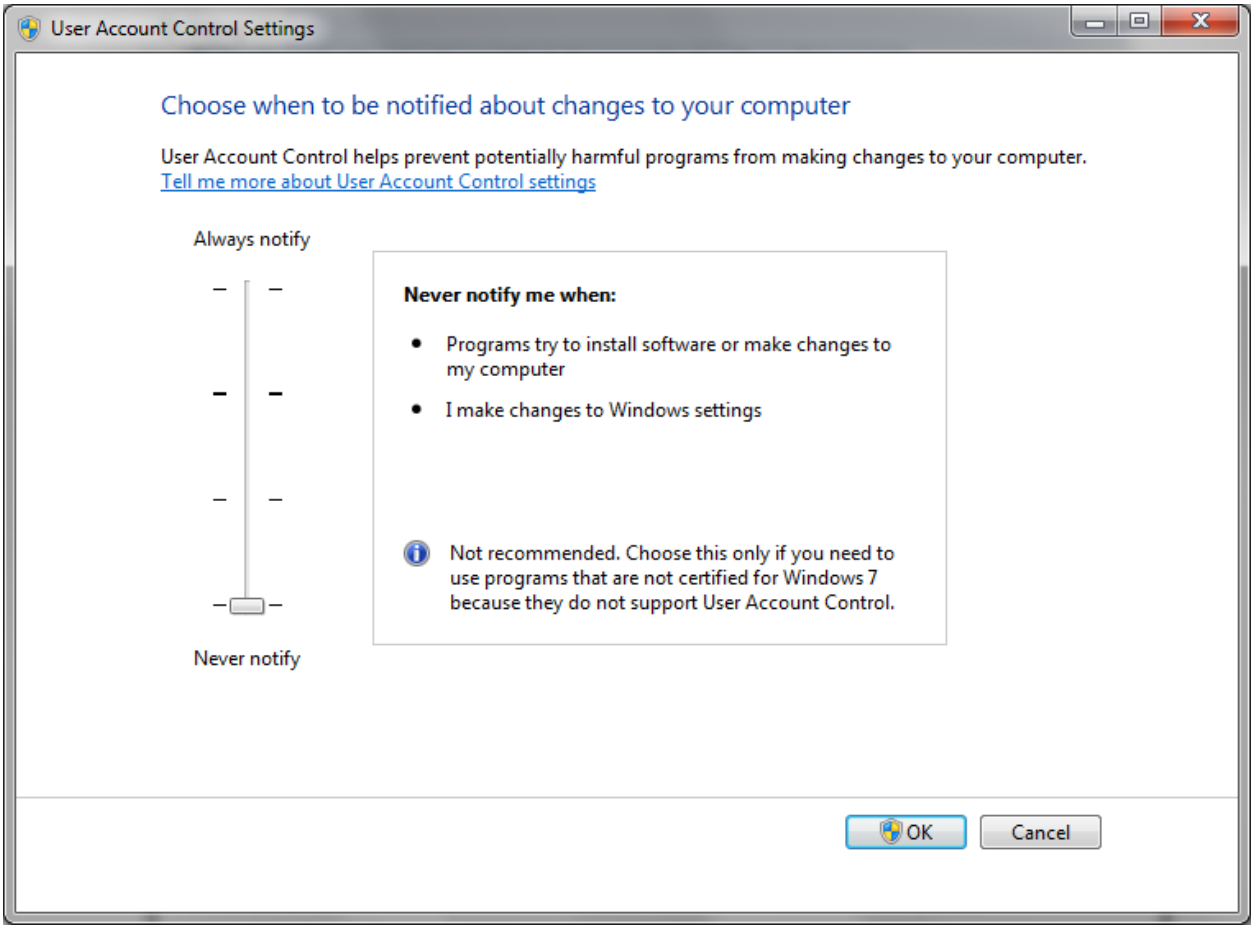
For debugging convenience, the most recent official EVM firmware releases already enable JTAG.

XD510 Configuration:

The following step is essential for use of XDS510 and XDS510 USB.
Type in UAC in the windows main search:



Click on “Change User Account Control settings”.
The following window will show up:



Lower the notification adjuster to “Never notify” (lowest setting).

Now restart your computer for the new setting to take effect.

Look for the sdopts.cfg file in one of the following two directories:

32 bit Windows OS - windows/system32
64 bit Windows OS - windows/SysWOW64.

Open the file using notepad.

In the section marked by:

*# **
************************* XDS510USB DEFINITIONS ***********************************
**

[EmulatorId=510]
#
==========
XDS510USB Port 0x510
Under #ARM specific options.*

Remove the # in the following statements:

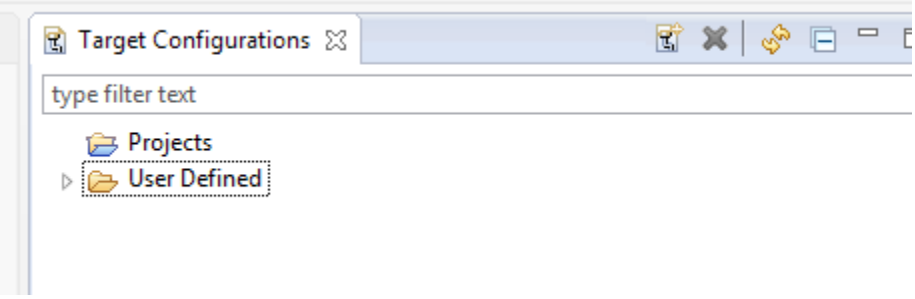
#DevArm7NoChain0=YES
#DevArm7IsBigEndian=YES

So it will read:

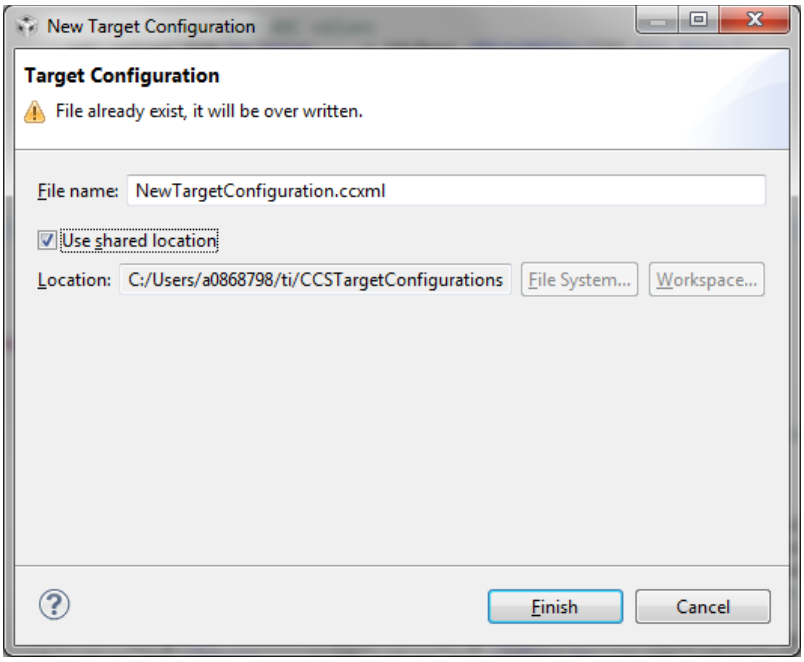
DevArm7NoChain0=YES
DevArm7IsBigEndian=YES

Save the modified sdopts.cfg.
XDS510 is now configured.

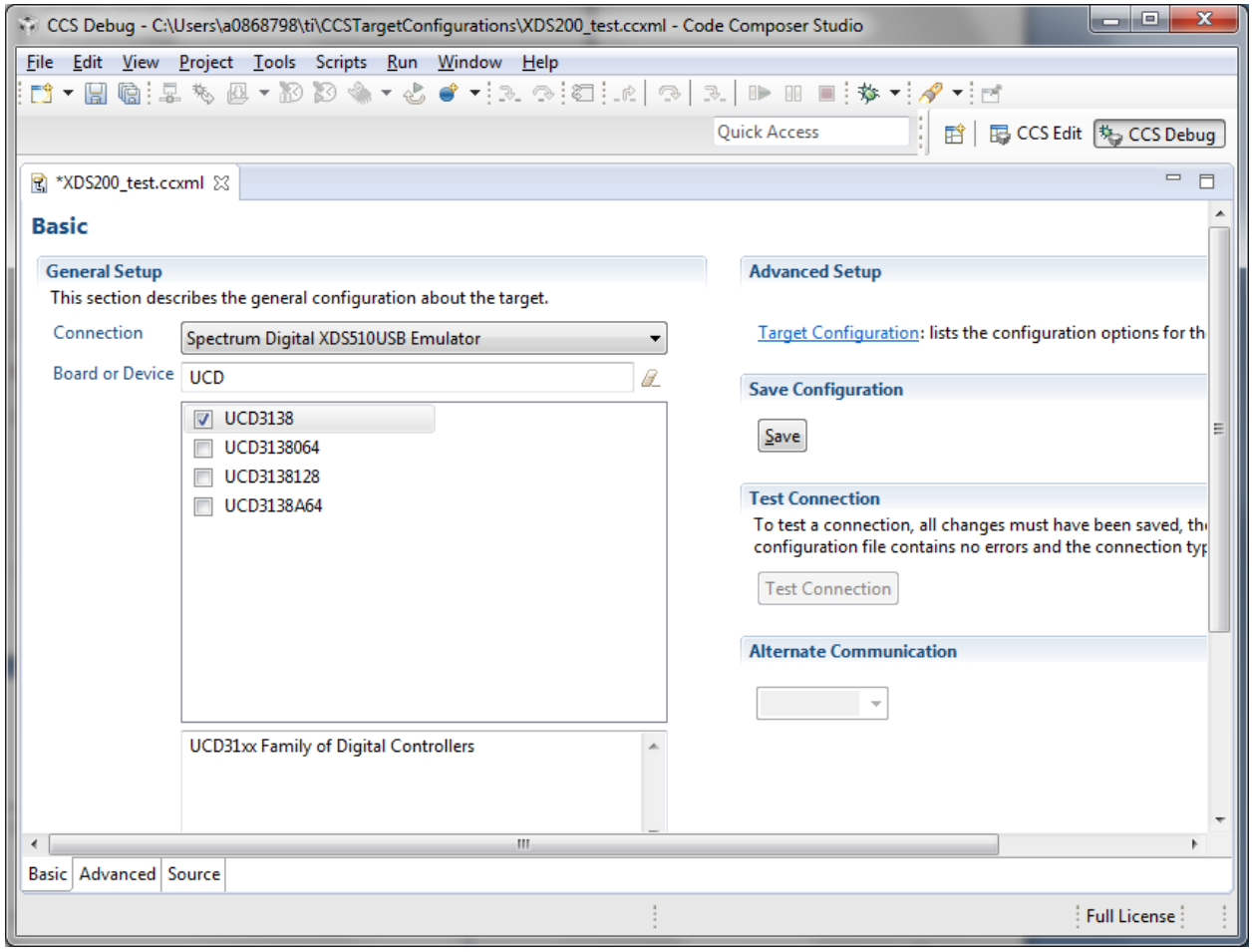
Menu: View-> Target Configurations



Right click on “User Defined” and choose “New Target Configuration”.



Name your configuration and click finish.



In the new window, choose “Spectrum Digital XDS510USB Emulator”.
Inside the “Board or Device” field, type “UCD”.
The list of all supported UCD devices will show up in the box below.
Select the desired Device and Click “Save”.

If after typing “UCD” in the mentioned field the list of UCD devices does not show up, this means that the support for UCD devices is not included in your installed version of CCS.

The support for UCD devices can be added by one of the following procedures:

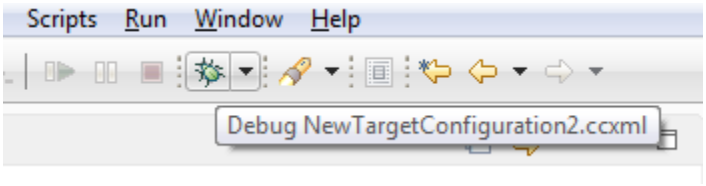
1) Upgrade your CCS version to CCS6.1 or higher (will be available after February 2015).

2) Add the support for UCD family through the “TI UCD Series Device Support” server.
This option will soon be accessible through the CCS Menu: Help -> Install New Software - > …

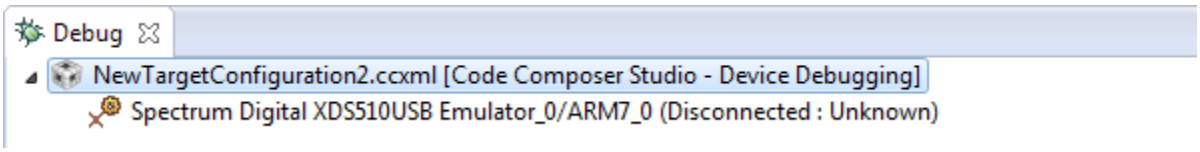
3) By extracting the supplied zip file “digital_power_device_support_1.0.0.zip” into the ccs_base directory. Location of this directory depends on your CCS installation location, but it is usually located at C:\ti\ccsv6\ccs_base.

After following one of the above 3 options, please go back to the above configuration window and type UCD in the “Board or Device” field. The UCD list of supported device will now appear accordingly.

When you are still in the newly configured view (tab), click on the bug like Icon in order to start a new debugging session.



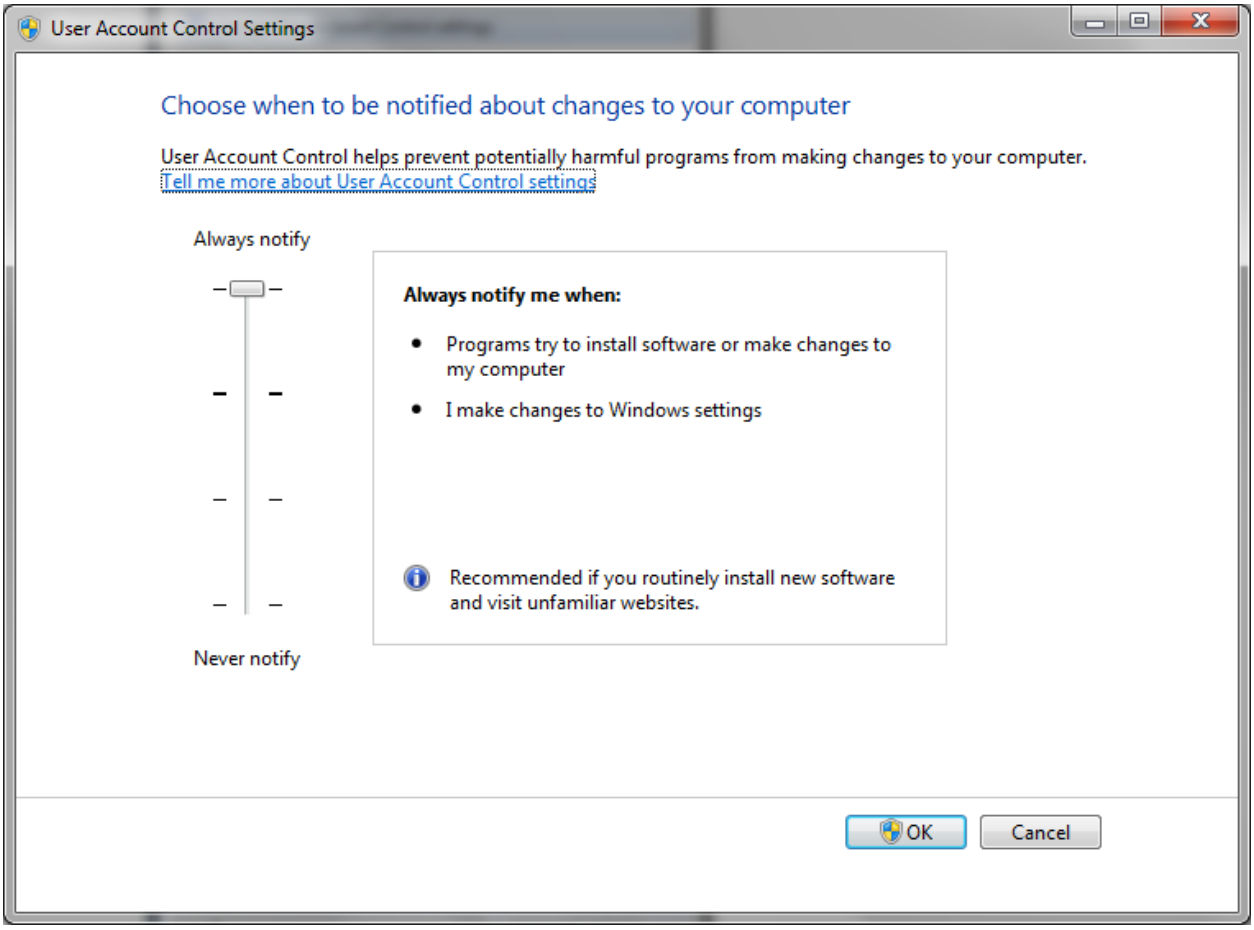
Now right click on the new emulator configuration and select “Connect Target”



For single stepping and breakpoint features: Go through the menu “Run-> Load Symbols…”

Your JTAG is ready for all uses except for firmware download.
Since the flash driver for firmware download is not ready, you need to use “Load Symbols…” and not “Load Program…”.

Remember to return the UAC (User account Control settings”), back to its original or default setting.


User Account Control Settings
Choose when to be notified about changes to your computer
User Account Control helps prevent potentially harmful programs from making changes to your computer.
Tell me more about User Account Control settings
Always notify
Never notify
Always notify me when:
Programs try to install software or make changes to my computer
I make changes to Windows settings
Recommended if you routinely install new software and visit unfamiliar websites.
OK
Cancel