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We are a
committed
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programme

Installing the HUNT ENGINEERING API on a PC without the DSP boards

In some cases, customers want to start working with the software while the hardware is not ready yet. This document describes how the HUNT ENGINEERING software can be used in cases when the hardware is missing.

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HUNT ENGINEERING has a standard delivery time of 4 weeks. In some cases customers want to start developing the software (or get accustomed to the development tools) at time of ordering. This document tries to describe how the HUNT ENGINEERING software can be used whilst there is no hardware yet to run DSP programs on.

HUNT ENGINEERING software is built around Code Composer Studio. If no DSP hardware is available, Code Composer Studio can be used in simulator mode. Execution of DSP programs will be simulated by Code Composer Studio. Most of the HUNT ENGINEERING software can also run in this mode.

The document will now describe installation of the software, how to get Code Composer Studio running in simulator mode, and describe how the different parts of the HUNT ENGINEERING software work in simulator mode.

Installing the HUNT ENGINEERING API

Insert the HUNT ENGINEERING CD. In Windows Explorer, open the CD and start “DSP_CD”. Go to “Install Drivers & Tools”, then “Install or Upgrade”. The HUNT ENGINEERING API setup program will now start. Simply answer the questions as if it was a “normal” installation.

The software will all get installed normally, and then you will be requested to do a reboot. After the reboot, setup will start again, and will try to do some confidence checks. Predictably, these will fail. Later, when you receive the hardware, setup will continue from this point, and then do the confidence checks. The important thing is that all the HUNT ENGINEERING API software is installed properly as if it was a “normal” installation.

As part of the HUNT ENGINEERING API installation, the HERON-API gets installed as well, automatically.

Installing the HUNT ENGINEERING Server/Loader

If you also wish to install the HUNT ENGINEERING Server/Loader, return to the Windows Explorer window. Go to the “\software\sl” directory, and run the “setup” program in this directory. Answer all the questions as if it was a “normal” installation. The software should get installed fine. Then setup will try to do a confidence check, which again, predictably, fails. Finally, reboot the PC.

Set-up Code Composer Studio

To set-up Code Composer Studio, do a Start → Programs → Code Composer Studio 'C6000 → Setup CCStudio. First, a screen titled “Import Configuration” will show up. Simply close it. You should see three panes in one window titled “Code Composer Setup” now. Drag the “C6xxx Simulator (Texas Instruments)” driver from the middle pane to the left pane. This gives you a standard configuration with one processor. (You cannot add more CPU’s to the configuration.) Now quit the setup program. Save the changes if the program asks you.

Start up Code Composer Studio (Start → Programs → Code Composer Studio 'C6000 → CCStudio, or click the icon on the screen). Now, in the “Tools” section of the menu you will find 2 or 3 (if you installed the Server/Loader) plug-ins from us under the entry “HUNT ENGINEERING”. There will be a “Create new HERON-API Project” and a “Reset System” entry, and a “Server/Loader” entry if you installed the Server/Loader.

The Create new HERON-API Project plug-in

Use this plug-in to create new projects. It will work even if the DSP hardware isn't there. The plug-in will select the correct CDB file (provided by HUNT ENGINEERING), the correct linker command file (CMD file) and add the proper HERON-API libraries. The resulting project is ready-for-use with HERON-API and (optionally) the Server/Loader.

The Reset system plug-in

This plug-in is used to reset the hardware. Given that the hardware is absent, it is of little use. If you use it anyway, Code Composer Studio will complain that it "Can't Run Target DSP" and a second message will appear "Cannot reset the board".

The Server/Loader plug-in

The Server/Loader is a utility that allows you to boot a DSP system without Code Composer Studio. Even though you can create projects set-up to work with the Server/Loader, you cannot actually run them without the DSP hardware. The Server/Loader plug-in is therefore of little use in this stage.

The HERON-API is a framework that implements a standard API for accessing the communications mechanism hardware. On a HEPC8, for example, the communications mechanism is implemented by means of a number of FIFO's. The HERON-API shields you from the hardware and lets you access the FIFO's by means of a number of standard functions, such as "HeronOpenFifo", "HeronReadFifo" and "HeronWrite-Fifo". Being an API, the (software) interface will be the same on other and future HERON module types.

When using the Create new HERON-API Project plug-in, a new project will be created that is ready to use the HERON-API. However, when Code Composer Studio is used in simulator mode, HERON-API functions will not work as expected. This is because the FIFO hardware is not simulated within Code Composer Studio. So where the HERON-API expects a FIFO register, in simulation mode Code Composer simulates a memory location.

In conclusion, when developing software for HUNT ENGINEERING systems while the hardware hasn't arrived yet, we encourage you to use the HUNT ENGINEERING tools (such as the Create new HERON-API Project plug-in). But you must be aware that in simulator mode Code Composer Studio will not properly simulate HERON-API calls. And you cannot use the Server/Loader (either in .exe or plug-in mode), but you can create Server/Loader projects.