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HSB API Example

Description and Reference

With Microsoft Visual C/C++ 4.0

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The HSB example is an example program that shows how to use the HSB interface of a HERON carrier board. The example assumes you have loaded the DSP program onto the DSP module using Code Composer Studio, and will try to send and receive messages between the Host and the DSP module.

(This example will **not** work with TIM-40 carrier boards such as the HEPC2E, HEPC3, HEPC4 or HECPCI1. It will also **not** work with the HEPC6, a one 'C6x processor board.)

Compiling, Linking and Running the example

Compiling/Linking the Example

To compile/link the example, please create a new project with your Microsoft C/C++ 4.0 compiler ('Win32 Console Application'). After you created a new project, you need to set the path to the Hunt Engineering API include file ("heapi.h") and library ("hendrv.lib"). There is an environment variable "HEAPI_DIR" that points to the directory where you installed the Hunt Engineering API.

Include directory: \$(HEAPI_DIR)

Add library file: \$(HEAPI_DIR)\hendrv.lib

How to create and start a new project (Visual C/C++ 4)

In Microsoft Visual C/C++, create a new workspace

1. File → New.
2. Select "Project Workspace" and click "OK".
3. A new window has appeared. Select "Console Application".
4. Click "Browse" and change directory to the host_hsb example directory. Click "OK" in this "Choose Directory" window, we return to "New Project Workspace".
5. Type a name for the workspace at "Name". The workspace name will also define the name of the executable. We used "host_hsb" as the workspace name, and we will thus work with executable file "host_hsb.exe".
6. Click on "Create".

Add files and libraries to the project

7. Insert → Files into Project.
8. In "List Files of Type" select "Source Files (*.c, *.cpp, *.cxx, *.h, *.rc)", and add "host_hsb.c" to your project. Depending on in what directory the project was created, you may have to browse to a different directory. If you keep the CTRL key pressed, then you can select more than 1 file at the same time.
9. Click "OK".
10. Insert → Files into Project.
11. In "List Files of Type" select the libraries that must be added to the project workspace, e.g. Library Files (*.lib) in the case of the examples.
12. Change the window directory to "c:\heapi" (or the directory where you copied the API libraries into).
13. Select "hendrv.lib".
14. Click OK

Include files

15. Build → Settings.
16. Select the “C/C++” tab.
17. Select “Preprocessor” in “Category”
18. At “Additional include directories” type: “c:\heapi” (or the installation directory where you installed the HUNT ENGINEERING API into).
19. Click “OK”

Linker

20. The “hendrv.dll” library has been linked against the multi-threaded version of the C RTL. This is because it uses threads in some cases to handle asynchronous I/O. Any application using “hendrv.dll” (i.e. all Win32 API applications!) should also be linked against the multithreaded RTL (either debug or release versions). These can be selected as follows:
21. Build → Settings
22. Select the “C/C++” window
23. From the “Category” pull down menu select “Code Generation”
24. In the “Use run-time Library” pull down menu select a multi-threaded library
25. Click “OK”

Compile and Link

26. Do a Build → Rebuild All (or a Build → Build host_hsb.exe).

Running the example

Open a DOS box and browse to the host_hsb directory. Change directory to your project's Debug directory (or the Release directory, if you built a release version). Assuming that your executable is called 'host_hsb.exe', and you use a HEPC8 carrier board, type:

```
host_hsb
```

(You should have loaded 'heron_hsb.out' onto the DSP beforehand, for example by using Code Composer Studio). Following the instructions you should see messages being sent between the DSP and the Host.

The code for the out files is in the host_dsp example's 'dsp' sub-directory.

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