

Host Services Emulation Software

When the DSP places the HPI daughtercard in DSP Services mode, the daughtercard can no longer provide Host Services. For applications where it is desired to retain Host Services functionality *after* the DSP has placed the HPI daughtercard into DSP Services mode, it is possible for the DSP to emulate the Host Services functions in software, subject to the following constraints;

- The host computer must be connected to the DSK via the USB or serial port on the HPI daughtercard. This port cannot be used for general purpose communications; it must remain dedicated to Host Services communications.
- Only the data reads and writes are supported. Emulation of other message packets such as Reset and Run are not supported.
- The emulation software function must be called periodically in the main program loop.

Typical examples where this has proven useful are those applications that need to use the digital I/O or analog inputs, but still want to allow a host to maintain functional control of the DSP operation.

Incorporating into the DSP software:

To use the emulation software, include the file *host_service_emulation.c* in the CCS project. Place a call to the function *DoHostEmulationUsb()* or *DoHostEmulationSerial()* in the main program loop. Note that only one of the function calls should be used, corresponding to how the host is physically connected to the HPI daughtercard.

Use on the host computer:

On the host computer, the application basically runs as though Host Services are always available. There are two host software packages where the emulation software can be used;

1. C6X_Control – once the *C6XCONTROL_ResetAndRunCOFF* function has been called, you can only use the functions *C6XCONTROL_Write*, *C6XCONTROL_WriteFloat*, *C6XCONTROL_Read*, and *C6XCONTROL_ReadFloat*. (The functions *C6XCONTROL_GetSymbolValue* and *C6XCONTROL_getHPI_BaseAddress* can also continue be used, since they do not actually communicate with the DSK.)
2. C6DSK Matlab Interface – after the *C6DSK('run', 'filename')* command is used, you can only use the read (*'rxx'*) and write (*'wxx'*) commands.

To regain full host services functionality on the daughtercard to stop the program and/or load a new one, manually reset the daughtercard.