

## Using the C6X\_Control Software

The C6X\_Control software package is designed to support the creation of TMS320C6XXX DSK applications that can be run from outside Code Composer Studio, and controlled by an application on the host PC. The package software is based on the winDSK6 kernel.

The host computer can perform a few basic operations;

- Reset the DSP.
- Load a program onto the DSP.
- Start the DSP program.
- Read and write DSP memory.

Control of a DSP program is implemented by writing to variables in the DSP memory space. Program status and output data is obtained by reading from variables in the DSP memory space. While this can be done at any addresses in the DSP memory space, keeping track of the specific addresses of all the variables in the DSP program is tedious and error-prone, since variable location can change each time the program is recompiled. To simplify the process of finding variables, the host software establishes a special data structure (HPI\_Block) to use for the variables that will be in a known location.

### Finding the HPI\_Block Structure

The demonstration software uses a single structure HPI\_Block to store all variables that will be directly accessed by the host computer. The host software first loads the program onto the DSK, then establishes the location of the HPI\_Block structure by reading the memory location at 0x00000200. The address of the HPI\_Block structure is stored at this location; the storing of the address is accomplished in the file HPI\_Block.asm. This address can be obtained by the host application using the function GetHpiBaseAddress. Then, the host application can access any variable by adding GetHpiBaseAddress and the offset of the variable in the HPI\_Block structure to obtain the variable address, and then using the HPI\_Read/HPI\_Write functions.

The first 6 entries in the HPI\_Block structure are dedicated to initialization and control variables used by the host software. These should be left as is unless there is a compelling reason to remove them. In the sample application, the HPI\_Block's Codec variable is used to control what codec support is loaded by the program. This permits the use of the same program with all of the C6XXX DSK's, and requires that the host program.