Engineer To Engineer Note   EE-92

Setting Up Streams with the ADSP-2100 Family Debugger - Release 6.0

This procedure is based on one of the examples that comes with the ADSP-21xx software (Example 2 - can be found in *C:\Program Files\Analog Devices\VisualDSP\21xx\ Examples\Example2*). This program is a talkthru program that simply passes data through the serial ports. The DSP receives a value in SPORT1, then transmits it through SPORT1. The main part of the program is an infinite loop that waits for the SPORT1 receive interrupt to occur. The interrupt service routine performs all data processing (in this example, transferring data from the SPORT receive register to the SPORT transmit register).

For simulation purposes, input and output files will be used as inputs and outputs to the serial port. The file, `serin.dat` provides the input for the serial port. The debugger creates the file `serout.dat` and stores the output of the SPORT in this file.

This example is also documented in Chapter 7 of the ADSP-2100 Family Assembler Tools & Simulator Manual (page 7-25).

Procedure for setting up this example in the Debugger

1. Assemble and link your code to create an executable.
2. Open up the Debugger and select a new session with an **ADSP-2101 target.**
3. Load your executable into the Debugger and click on *DEBUG→ RESET* to simulate code bootup.
4. Go to *SETTINGS→STREAMS*. This will bring up the Streams dialog box. Make the following selections:
   a. Under Source (Debug Target) select SPORT 1 as your device.
   b. Next, fill in the destination file associated with SPORT 1. Under Destination (File) enter 'serout.dat' (or whatever name you choose for the output).
   c. Change the format to **binary.**
   d. Click on Connect. These steps have configured the output stream.
   e. Now, for the input stream, go back to Source (File). Browse to select the file, 'serin.dat' which should be in the *C:\Program Files\Analog Devices\Visual Dsp\Examples\Example2* directory.
   f. Change the format to **binary.**
   g. Go back to Destination (Debug Target). Select SPORT 1 as your device.
   h. Click on Connect. These steps have configured the input stream.
   i. Check the ACTIVE streams to make sure your selections were set correctly.
   j. Click on OK to close the Streams Dialog Box.
5. Jump to location 0x0029 in the program and change the value **0x6b27** to **0x6a27** to enable the SPORT.

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6. Set up the debugger to generate an RFS1 interrupt every 200 cycles by going to *SETTINGS→ INTERRUPTS* and selecting RFS1 (under External Interrupts) and entering 200 for the min and max cycles.
7. Run the program.
8. In a few seconds, you should see an error box come up that says

> Failed to read from device:
> FILE (C:\Program Files\Analog

Devices\Visual
DSP\21xx\Examples\Example2\Serin.dat, Binary)

Note: This means that the Debugger has reached the end of the file. Check the contents of your output file to determine if the talkthru simulation executed properly. You should see the same values in serout.dat as those in serin.dat.