Report 1 for Real-Time Signal Processing

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# Exercise 1- familiarising with the DSK and the debugger / monitor program:

Through this exercise, I know some useful ways to test whether the DSK system works well and is connected correctly or not, when it has been initialized. There are three application programs within the TMS320C5x DSK software package for testing the DSK memory, setting up the AIC and testing out the host/target communications interface.

## SELFTEST.OUT

After connecting the DSK system, I copy SELFTEST.OUT to the working directory and test the DSK board with the following command:

DSK5L -A –C1

The DSK responds with the messages as that showing in the handout, which tell me that the DSK has passed the test checking the DSK memory.

## FUNC.DSK

I connect an oscilloscope the DSK output RCA BNC and run the DSK debugger program with the following:

DSK5D C1

Then I see the debugger screen and load the FUNC.DSK file. The default FUNC.DSK is set up to generate random noise. After I execute this file, I see the random noise on the scope. Following the steps indicated in the handout, I change the vale at memory location 0xF0D to 1 and PC’s starting address to 0xA00. Finally, I run the program again and see the sine wave output on the scope.

Also, I can change the sampling rate to generate the different frequency of sinewave. So I change the values to TA=000Fh and RA-000Fh on data positions 0xF000 and 0xF01. I run the program from beginning and see the different frequency of sine wave.

The FUNC.DSK is used to check the functions of Analogue Interface Circuit (AIC).

## DSK\_SPEC.DSK

Finally, I connect the DSK system with an oscilloscope and a signal generator and copy the DSK\_SPEC.DSK to the working directory. Execute the file through the command:

DSK5L DSK\_SPEC.DSK –C1

By adjusting the settings I can see the spectrum of the DSK input singal.

# Exercise 2 - A/D, D/A and interrupts, ECHOINT.ASM & ECHOINT.DSK