**EE 445S Real-Time Digital Signal Processing Laboratory – Prof. Brian L. Evans**

**Lab 7 Instructions**

**1. winDSK demonstration**

Connect your DSP board with the PC through the serial cable. Connect the headphone jack of the PC with the audio lineout jack on the DSP board with stereo cable. Run “audio effects” in WinDSK, test different special effects through earphone. (You can play any music in the PC.)

**2. DSP implementation of echo effect (Code Composer)**

* Create a new project with the source files in C:/CD/code/chapter\_10/ccs/Echo
* You can only load one ISR file in your project at a time.
* Run the program and listen to the echo effect generated by FIR and IIR comb filters.

**3. DSP implementation of flanging effect (Code Composer)**

* In this task you need to modify the code to implement the flanging effect.
* The flanging effect needs a FIR comb filter with a varying delay (as shown in the equation on page 188 of the textbook). Here we choose the maximum delay to be 1ms. So R equals 48 (given that Fs = 48 KHz). Set f0 in the equation to be 15 Hz.
* Modify the code in the original codes in the ISR function to implement this FIR comb filter with varying delay.
* Listen to the flanging effect and let TA check your result.