Module	Description	Demonstration	
FIR Filter	Applies a 64-tap Finite Input Response filter to an 18-bit audio signal.	Used for anti-aliasing and reconstruction of main audio signals going to AC'97 codec chip. Also available as a routable effects block. Default instantiation will contain <> filters. Available filters are of the low-pass, high-pass, and all-pass (phase-changing) variety.	
Delay	Input signal is recorded into a buffer of user-defined size. Buffer is played back at user-defined speed after it is filled.	Used as the basis for several effects. Demonstration will be with audio.	
Pan	Splits a mono audio channel into a pair of equal-power (root x) stereo signals.	Mix will be altered to show panning between left and right channels.	
Mix	Outputs a weighted sum of two signals, based on user-defined mix setting.	The difference between wet and dry outputs will be demonstrated using the mix module.	
Signal Generator	Outputs sine, square, triangle, and sawtooth waves at user-defined frequency/amplitude.	Used as input to other modules, such as delay, to create new effects.	
Signal Routing	Routes the 18-bit audio output signals of effects modules into the appropriate 18-bit audio inputs of the effects modules. A physical patch bay updates a routing table used to multiplex signals correctly.	Applying different connectivity to the patch bay will live update the signal path through the audio effects.	
Mouse/Keyboard	Select blocks/inputs on the visual display and alter non-signal inputs.	Parameter and Signal Generator assignment should be accessible using both mouse and keyboard.	
Visual Display	Provides visual feedback of module output activity (no connectivity information). Displays modules parameters and available signal generators.	Will give visual feedback as device is used.	
Audio Interface	Applies a low-pass filter to signals coming from and going to the AC'97 codec chip to anti-alias. Includes the ac97 and ac97commands modules from Lab 4(a).	Demonstrated by use of audio.	