

Timeline

Sun, Nov 21

- Proven functionality of algorithms with Matlab:
 - Audio In \rightarrow FFT \rightarrow Gain Curve \rightarrow IFFT \rightarrow Audio Out
 - Gain curve modification based on inputting a new waveform
 - Drawing the waveforms onto a display (at least drawing the gain curves, but hopefully also the FFT and audio waveforms as well)
- Construct an FFT and an IFFT with Coregen as well as a test environment for the labkit so that a sine wave can put into the FFT and a single frequency value can be put into the IFFT. Also create a path allowing the output of the FFT to be fed directly into the IFFT.

Wed, Nov 24

- Tested and proven functionality of the FFT and the IFFT on the labkit.
- Construct gain curve application module (i.e. the multiplier) and place between FFT and IFFT.
- Construct and test gain curve memories. Fill one memory with a flat gain curve of 1 and the other with a notch filter that would take out the sine wave produced earlier.
- Begin designing display modules:
 - main VGA output controller
 - gain curve display
 - waveform displays (FFT input and output, IFFT input and output).
- Test the display on Nexys2 FPGA over the weekend with dummy modules feeding data into the display blocks.

Mon, Nov 29

- Ensure that display modules work on labkit.
- Begin design of first UI input method (incremental gain curve calculation).
 - FSM for getting user input
 - Gain curve recalculation based on input

Wed, Dec 1

- Test first UI
- Implement and test existing PS/2 mouse module on labkit
- Begin designing second UI (mouse interface)
 - FSM to control gain curve input
 - Recalculation module

Sun, Dec 5

- Finish integrating all modules
- Final testing