Project Proposal
Multi-Effect Unit for Guitar
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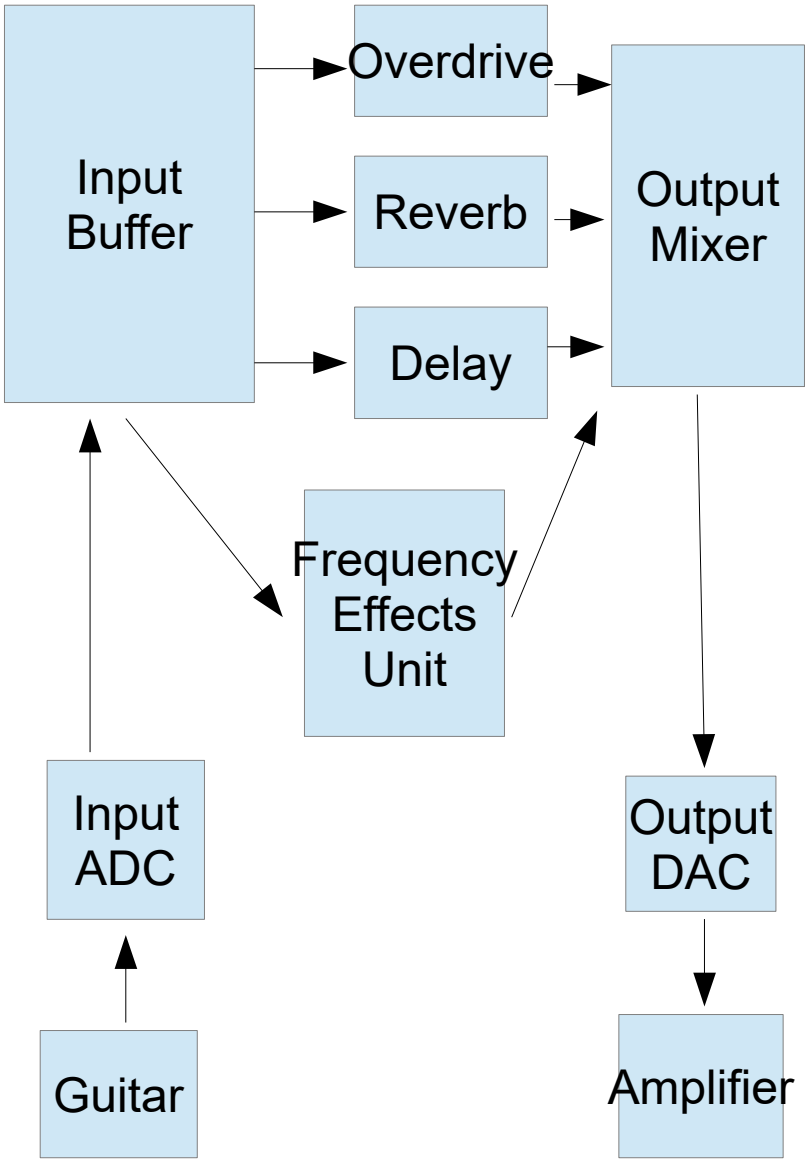
Proposal:

The project being proposed is a multiple effect unit for a guitar using the DE1-SoC FPGA board for a reverb effect, delay effect, and an overdrive effect. If possible within timeframe, frequency based effects may also be added (chorus and equalizer effects).

Design:

The DE1-SoC board will be used for this project, utilizing the onboard audio input and output. The overdrive effect, as well as the reverb and delay will be designed and implemented entirely on the FPGA side of the board. If frequency based effects are added, this portion will utilize the onboard Cortex-A9 processor system since these effects can likely not be easily implemented in an FPGA, although if this is possible it will be created in the FPGA side. The onboard switches and buttons will be used to select which effects are active, as well as level control, decay, and mix settings for the effects. The slide switches will be used to determine which effects are currently active. Figure 1 shows the block diagram for the system.

Figure 1. Block Diagram of Effects Unit.



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