DE0\_Nano\_DAC repository contents

*DAC\_12bitController\_Eagle* contains the Eagle files for the Breakout Board schematic and layout. This is so that a user can have more boards printed out. The schematic shows the electronic components necessary to stuff the board. This along with the FPGA code are designed to control one such daughter board per DE0\_Nano board.

*DAC\_control\_files* contains both some python code and a C++ control program written in the Visual Studio 2013 environment. The python code is written so that if the user opens *convert\_voltages\_to\_waveform\_line.py* then it automates writing a waveform file compatible with the DAC system. The C++ executable is in the “Debug” subfolder. To run the file, the Visual Studio runtime environment must be downloaded and installed. To compile the code yourself, it requires Visual Studio 2013 or later.

*DE0\_12bitDAC\_controller* contains the FPGA code. It is written in VHDL in the Altera Quartus Prime development environment. This code defines the logic to communicate with the computer and perform signal processing to read ADC values and output DAC values. It also handles the sequencing of logic pulses from the logic outputs on the Breakout Board.