

# MP5 - Final Project Proposal

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## Project Title

Enhanced Waveform Generator with SPI Control Interface

## Project Description

We propose to extend the sine wave generator developed in MP3 by implementing support for square waveform and frequency control through a serial communication interface.

## Design Tools and Methodology

- We will use the OSS-CAD Suite for simulation
- All modules will be implemented in SystemVerilog and tested using Icarus Verilog and GTKWave
- Hardware testing will be performed on the iceBlinkPico board

## Expected Outcomes

- A waveform generator module that supports sine and square waves
- An SPI interface to control waveform type and frequency
- A testbench and simulation results demonstrating functional correctness
- A working hardware implementation on the iceBlinkPico board