Experiment 3 - Oscilloscope

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Abstract— This document is about designing and implementing a oscilloscope using the Cyclone II board

Keywords—wrapper

1. Exponential Engine

The Verilog code of this testbench is shown in

Fig.1

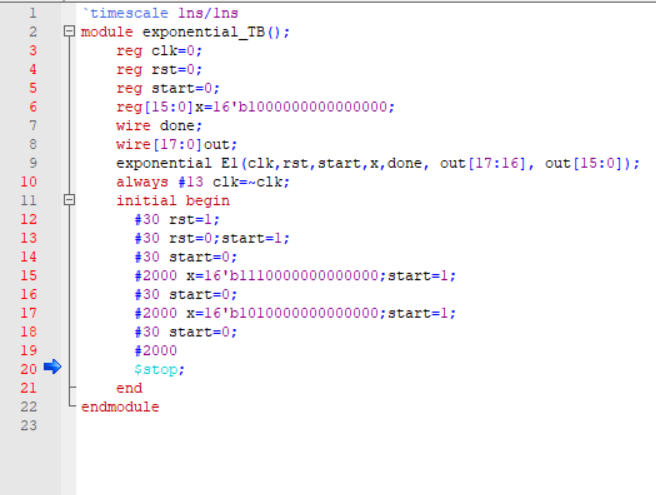
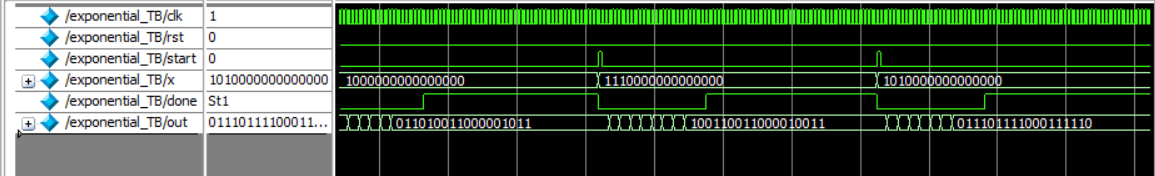


Fig. 1: The Verilog code of Accelerator testbench

The functionality test results are shown in fig.2, 3, 4, 5, 6 and 7.



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Figure .2: Test result of Fullwave sinus wave

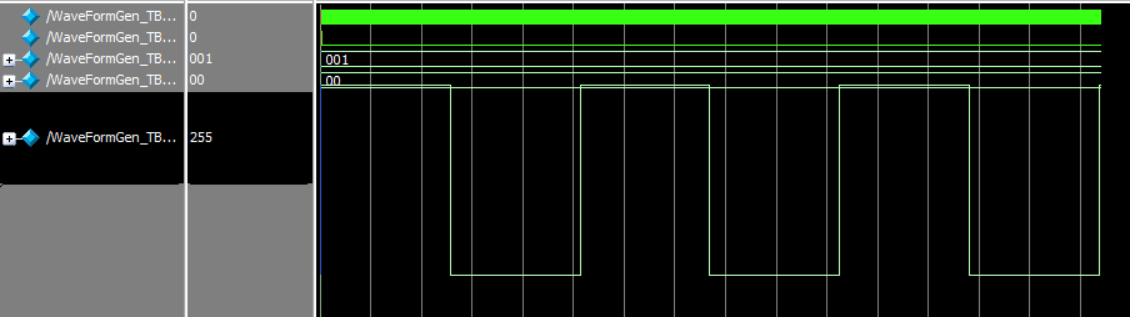


Figure. 3: test result of Rectangular wave

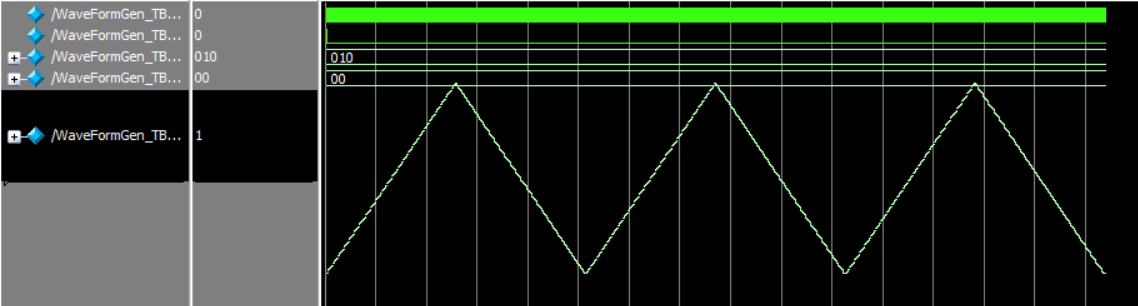


Fig.4: test result of triangular wave

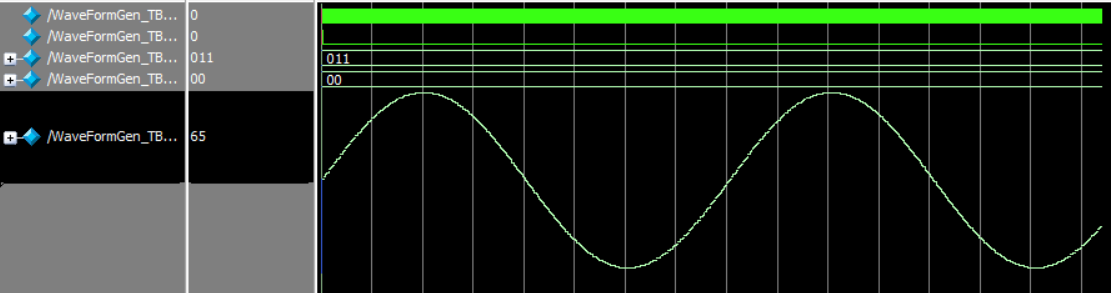


Fig.5: Test result of sinus wave

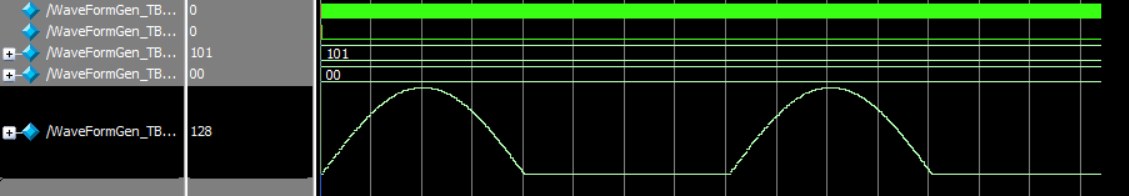


Fig.6: Test result of Halfwave sinus wave

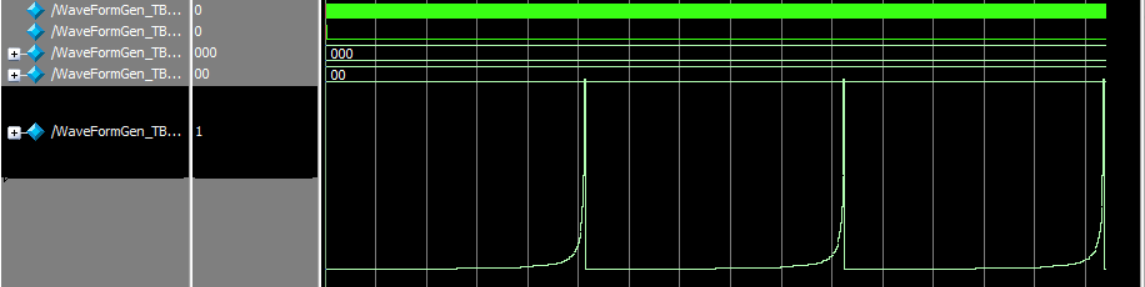


Fig.7: Test result of Reciprocal wave

1. Digital to Analog conversion using PWM

The Verilog code of PWM module is shown in fig.8.

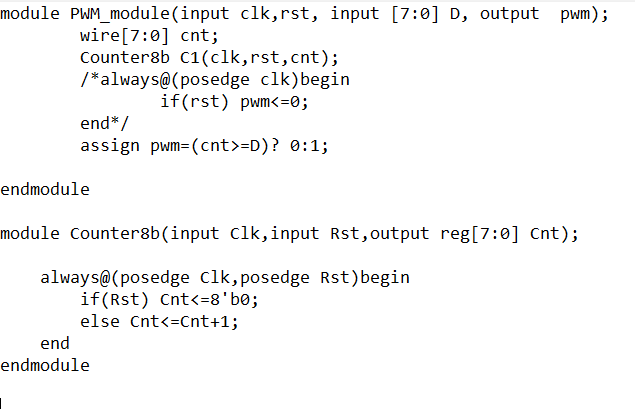


Fig.8: Verilog code of PWM module

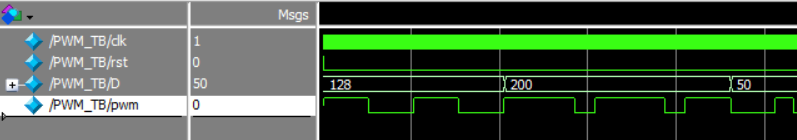


Fig.9: test result of PWM module

Because of the RC circuit, we see some time delays in actual implementations.