Week 2 Application Assignment: Mission 004

Overview

The goal of this assignment is learn how to use the Quartus Prime tool to create an example design. The student should be following the video instructions and creating the example as they go along. Their progress is checked at milestones by presenting screenshots which are matched to the solution screenshots to verify their work. Milestones checked are design schematic creation, design compilation, RTL viewing, timing analysis and simulation.

This assignment is required. Peers must review 3 submissions to pass the assignment.

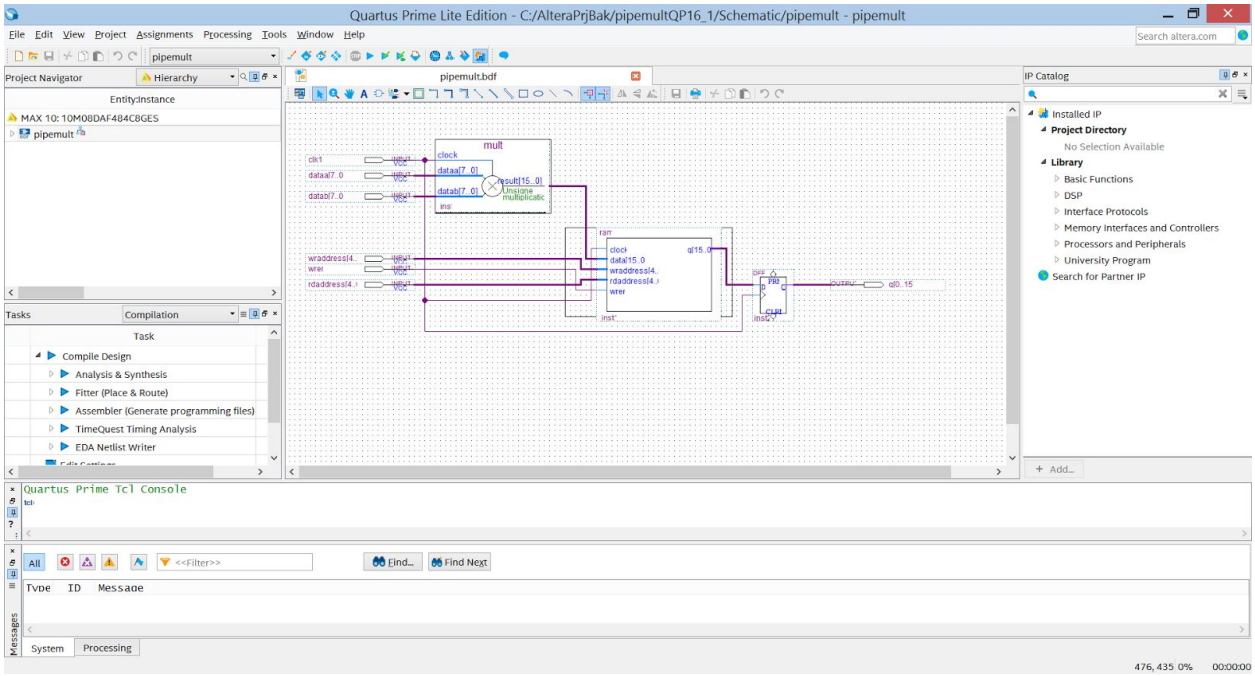
Submit screenshots (Format: .jpg) of:

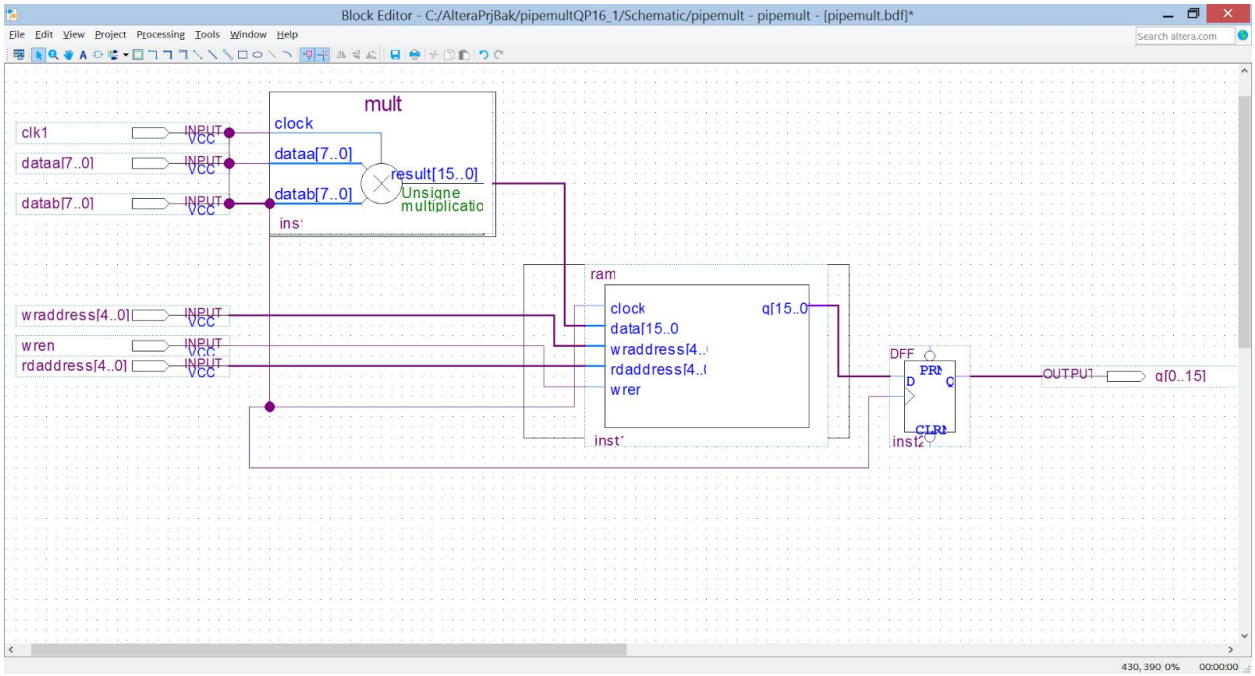
1) The completed pipemult schematic after Video #6
2) The Compilation Report after Video #7 showing Fmax and % utilization
3) A high level RTL view after Video #8
4) The Compilation Report at the end of Video #10 showing Fmax and % utilization
5) The ModelSim Simulation waveform window at the end of Video #11

Solutions:

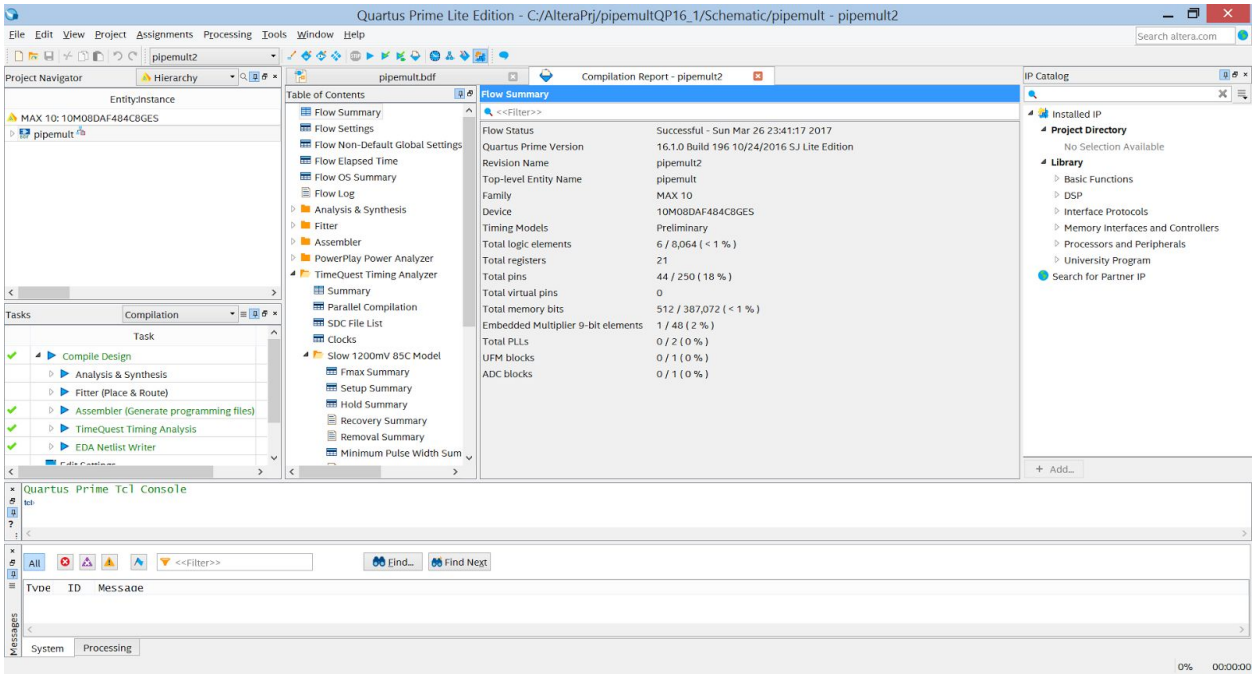
Submit screenshots (Format: .jpg) of:

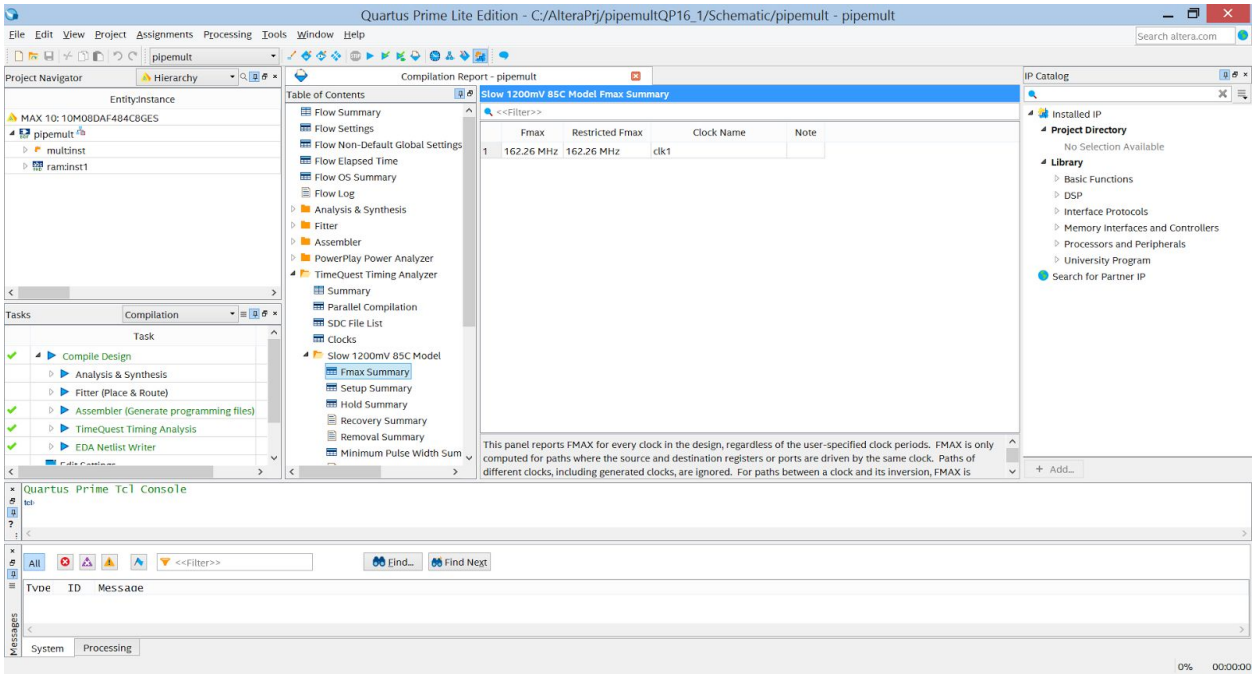
1) The completed pipemult schematic after Video #6



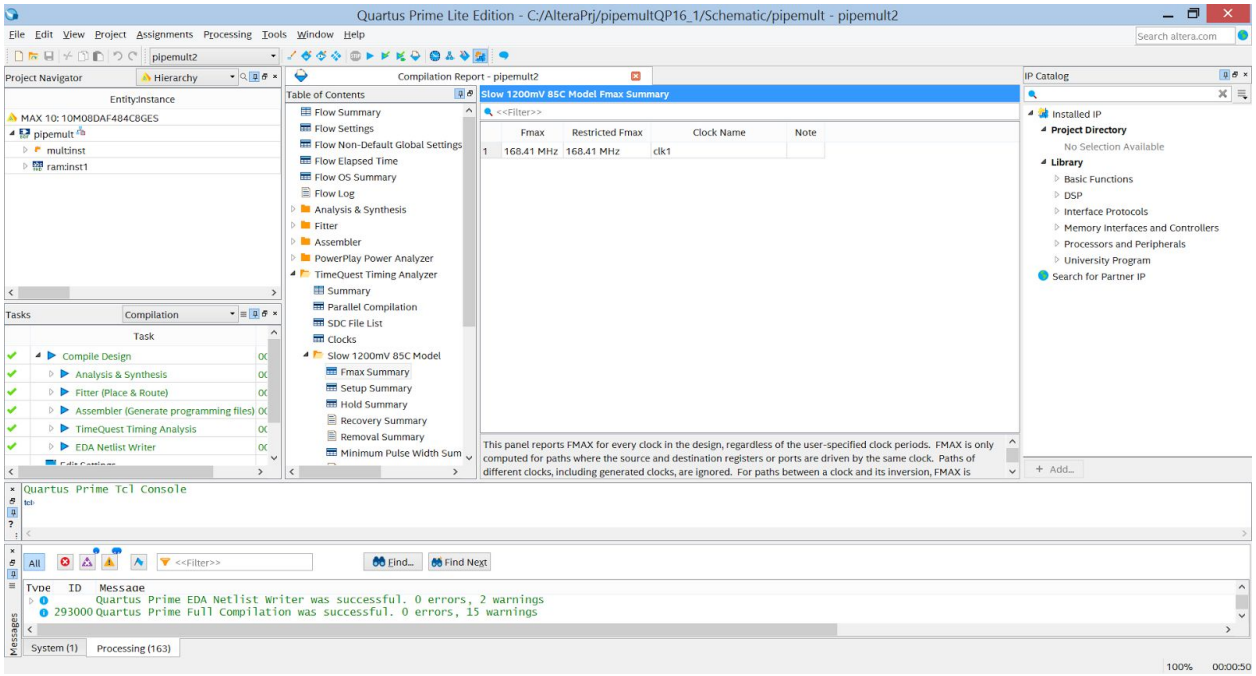


2) The Compilation Report after Video #7 showing Fmax and % utilization



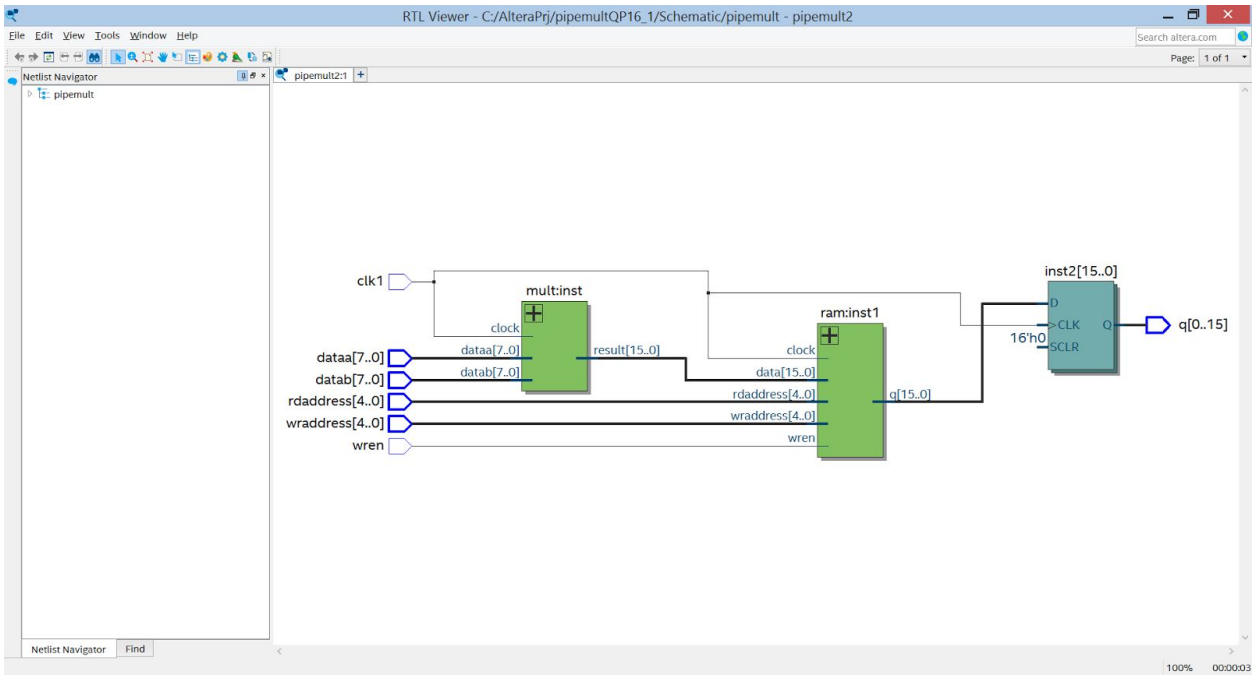


Revision 1 Fmax

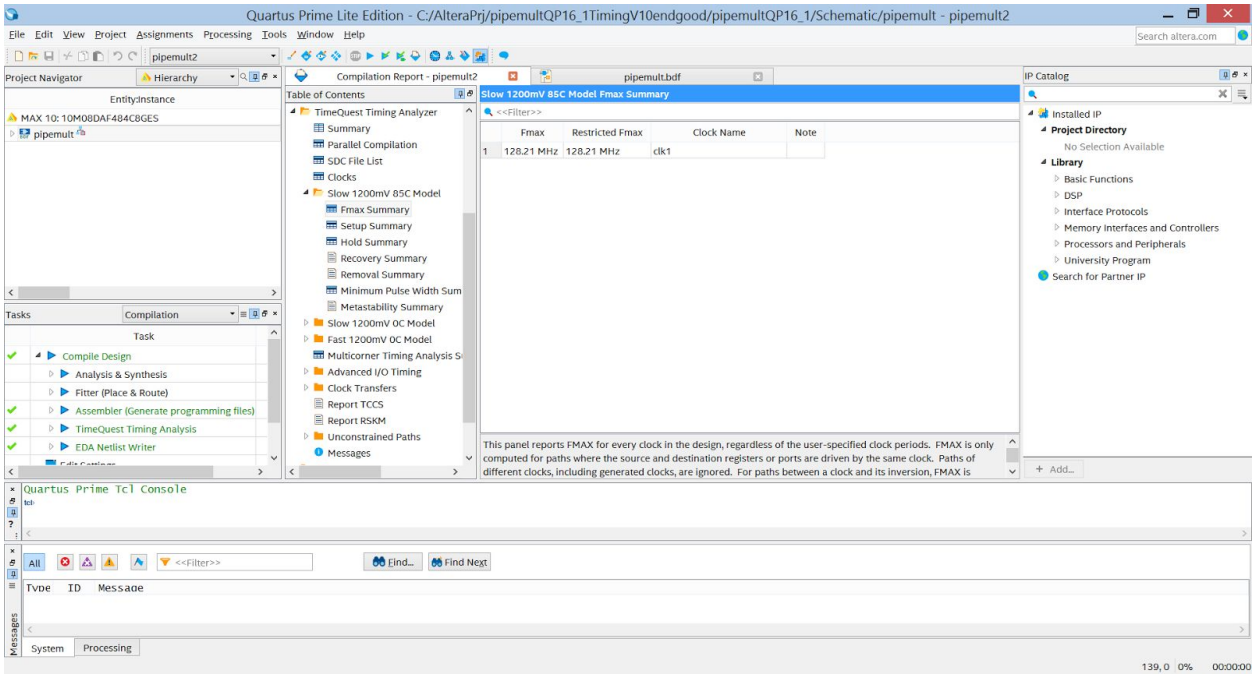


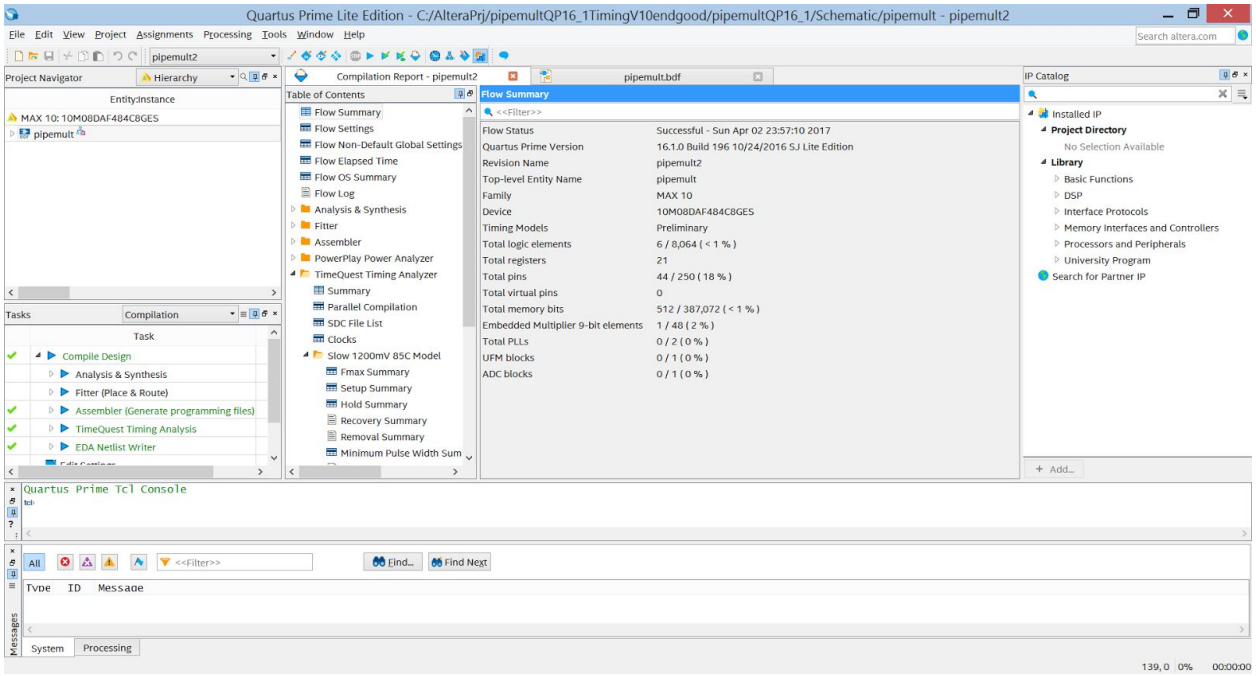
Revision2 Fmax

3) A high level RTL view after Video #8

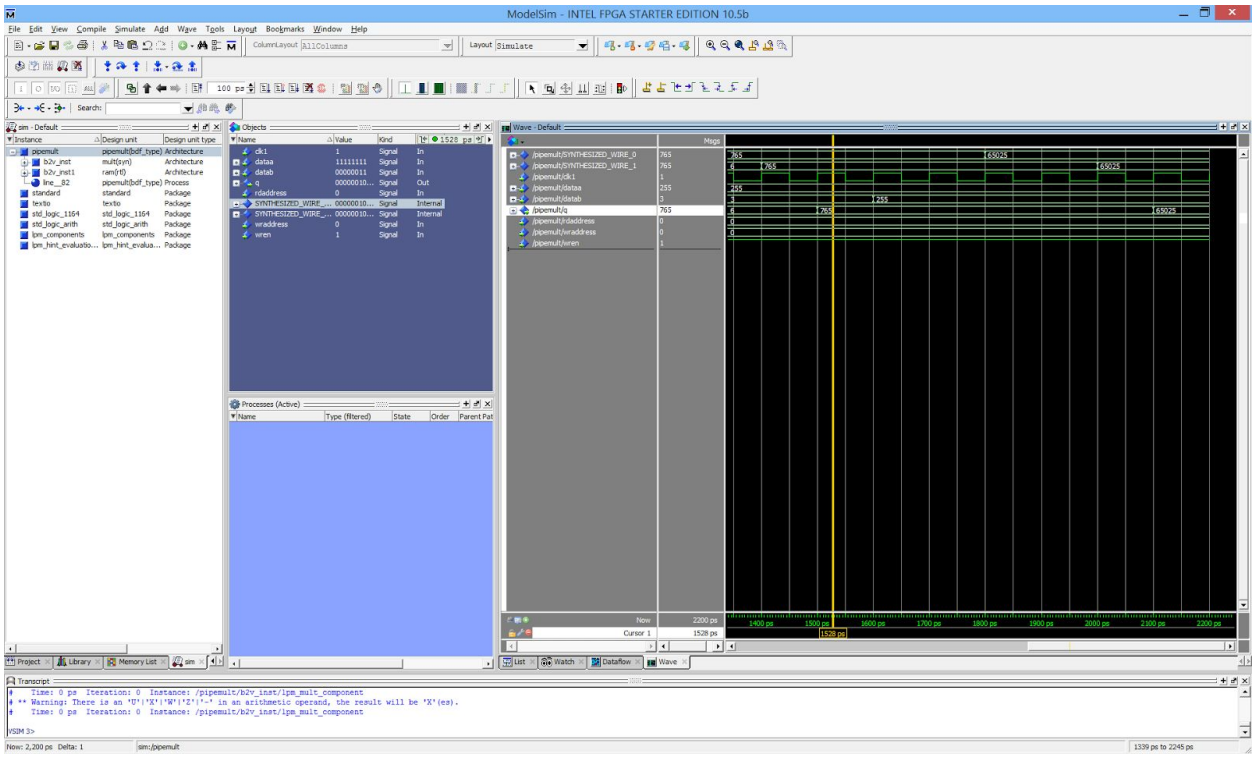


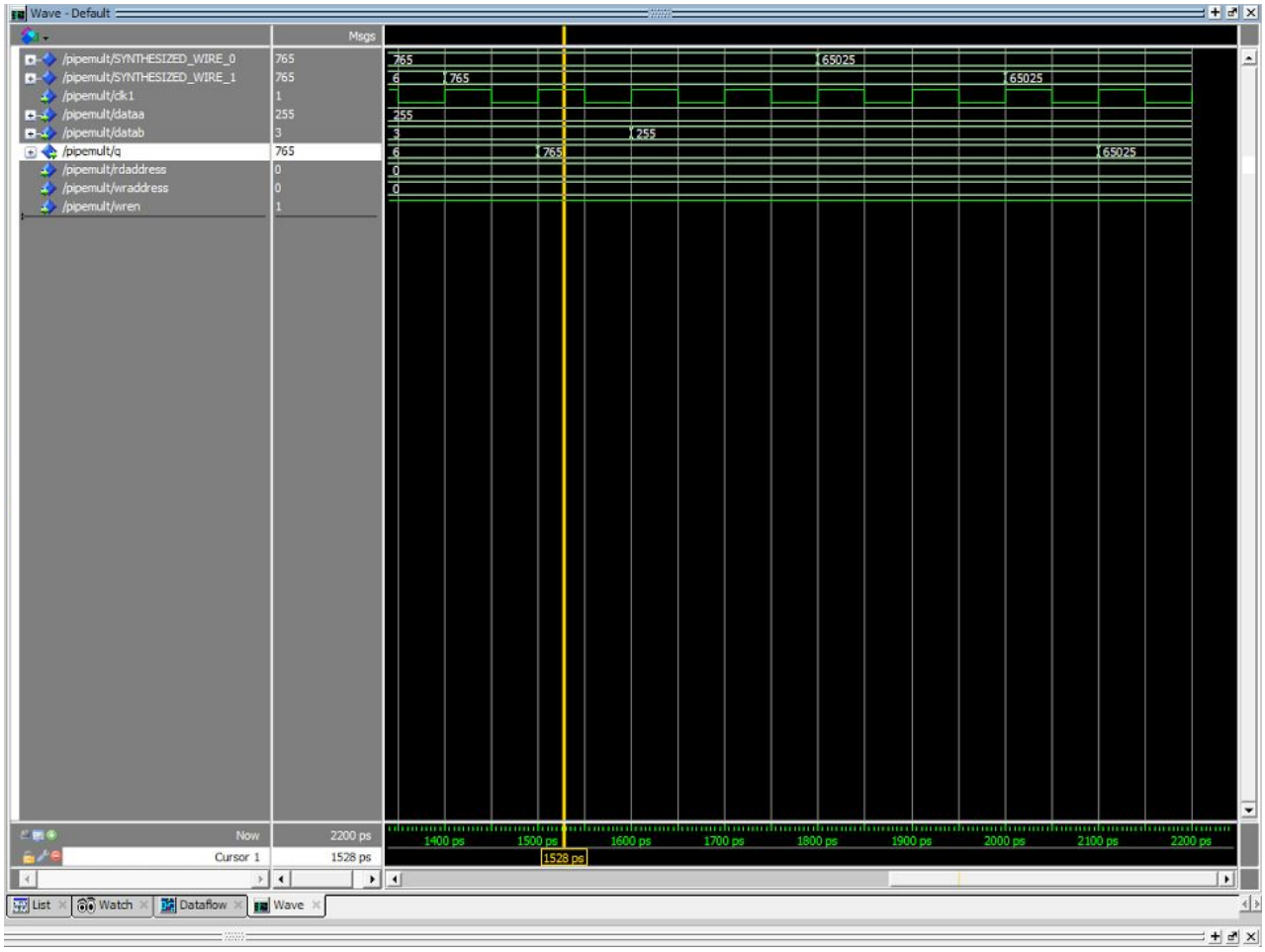
4) The Compilation Report at the end of Video #10 showing Fmax and % utilization





5) The ModelSim Simulation waveform window at the end of Video #11


ModelSim - INTEL FPGA STARTER EDITION 10.5b
File Edit View Compile Simulate Add Wave Tools Layout Bookmarks Window Help
sim - Default
Objects
Processes (Active)
Wave - Default
Transcript
Time: 0 ps Iteration: 0 Instance: /pipemult/b2v_inst/lpm_mult_component
** Warning: There is an 'U'|'X'|'W'|'Z'|'-' in an arithmetic operand, the result will be 'X'(es).
Time: 0 ps Iteration: 0 Instance: /pipemult/b2v_inst/lpm_mult_component
VSIM 3>


Wave - Default
Msgs
/pipemult/SYNTHESIZED_WIRE_0
/pipemult/SYNTHESIZED_WIRE_1
/pipemult/clk1
/pipemult/dataa
/pipemult/datab
/pipemult/q
/pipemult/rdaddress
/pipemult/wraddress
/pipemult/wren
765
765
1
255
3
765
0
0
1
65025
65025
65025
Now
2200 ps
Cursor 1
1528 ps
1400 ps
1500 ps
1600 ps
1700 ps
1800 ps
1900 ps
2000 ps
2100 ps
2200 ps
1528 ps
List
Watch
Dataflow
Wave