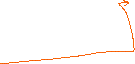
Mohammad Abaeiani

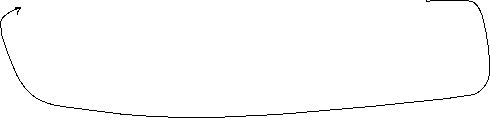
810198432

DLD CA 6

­



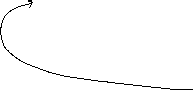
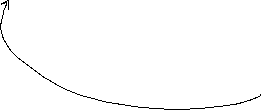
An alternative form of the design is like below (used in this project):



Sequential multiplier:



Wrapper:

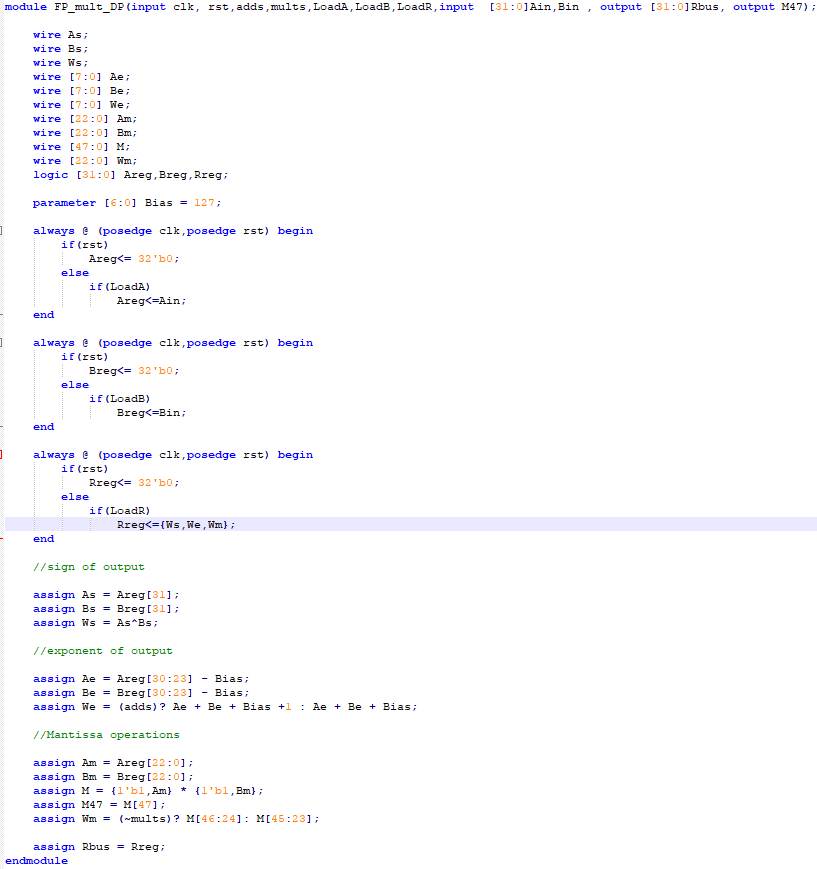


Code:

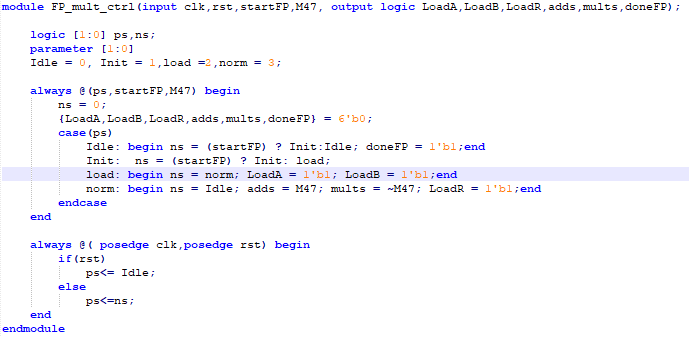
I used option d for this part

The plain FP multiplier with multiply operation instead of sequential.

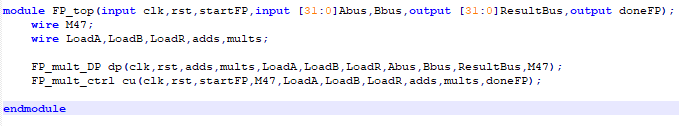
Data path:



Controller:



Top level:



Output:



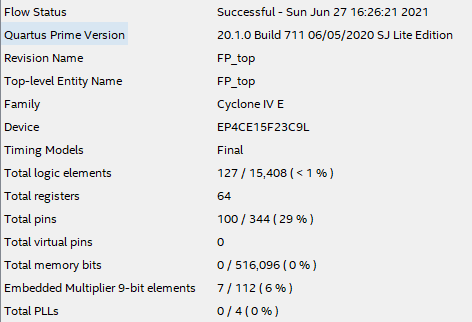
As an example I did

14.79 \* -98.13 = 1451.3427

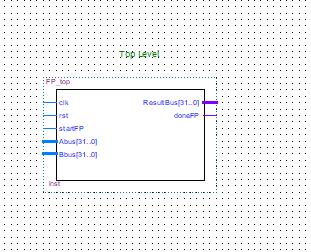
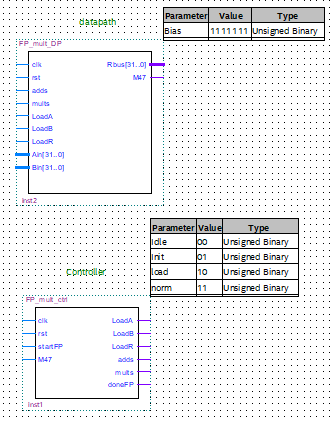
The output is 11000100101101010110101011110111 which is -1451.342651 in decimal and its fairly close to the exact output.

Synthesis:

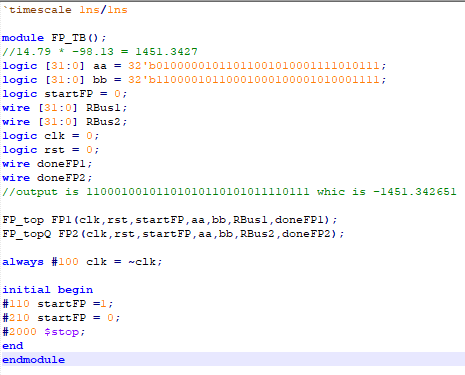
Report:



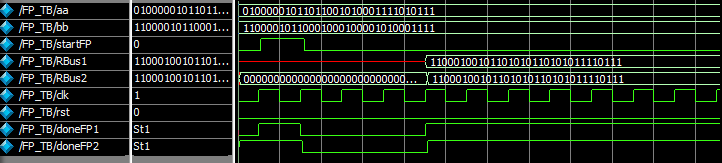
Symbols:



Test bench for pre and post simulation:

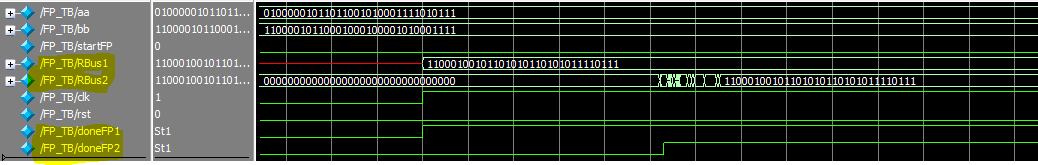


Wave Form:



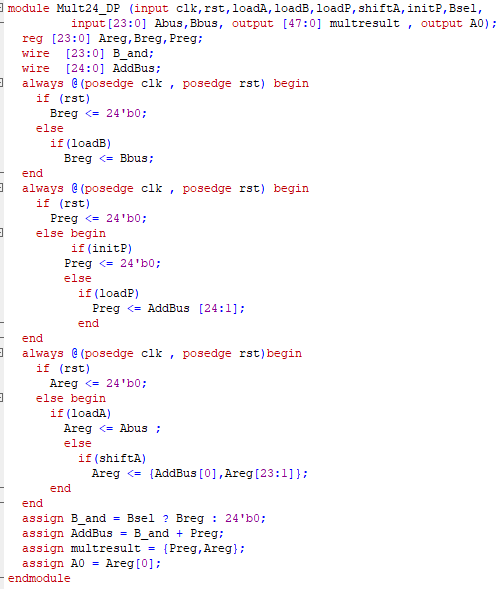
RBus1 and FP1 are for pre synthesis and RBus2 and FP2 are for post synthesis

If we zoom in we find that the post synthesis one triggers with a bit of delay and also it prepares the output in different steps.

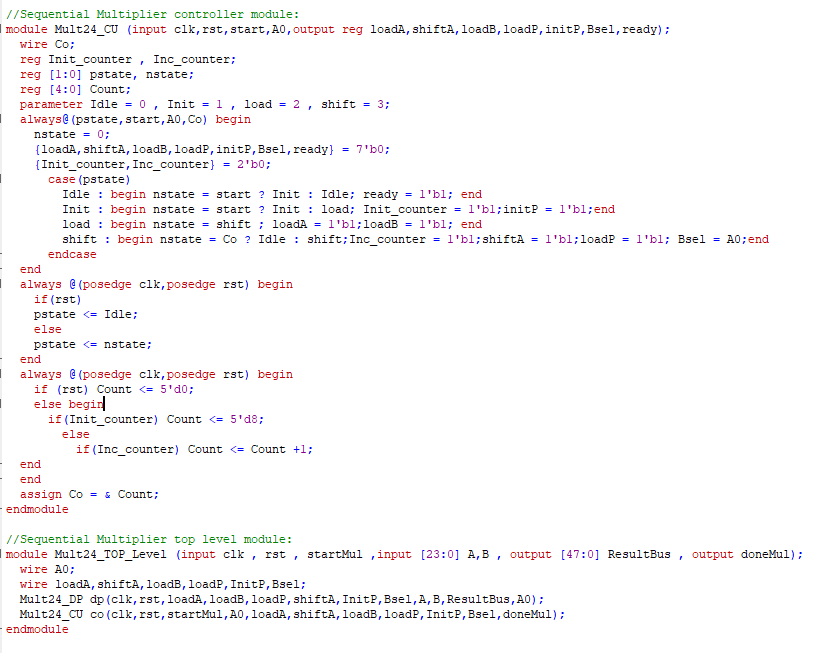


Sequential mult:

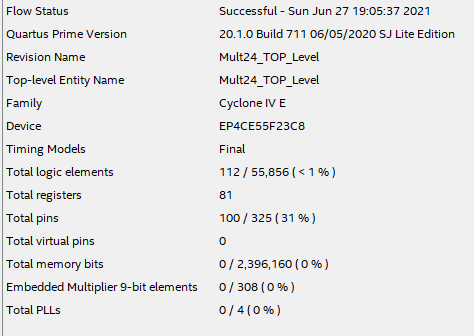
Datapath:



Controller and top level:



Synthesis report:



Symbols:

