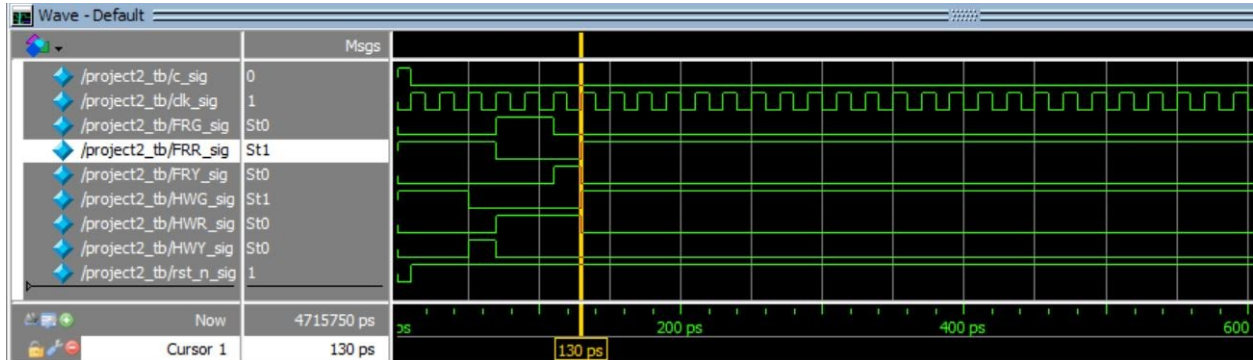## ModelSim simulations (with different edge cases)

1 cycle = 20 ps
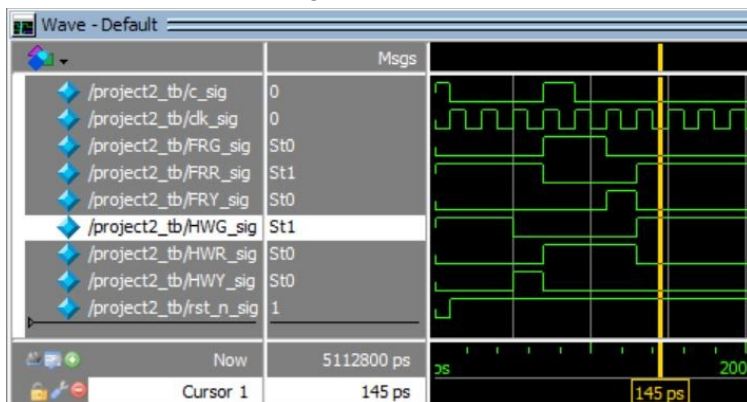
Case 1

Description: 1 vehicle on farm road, then no vehicle on farm road for a while
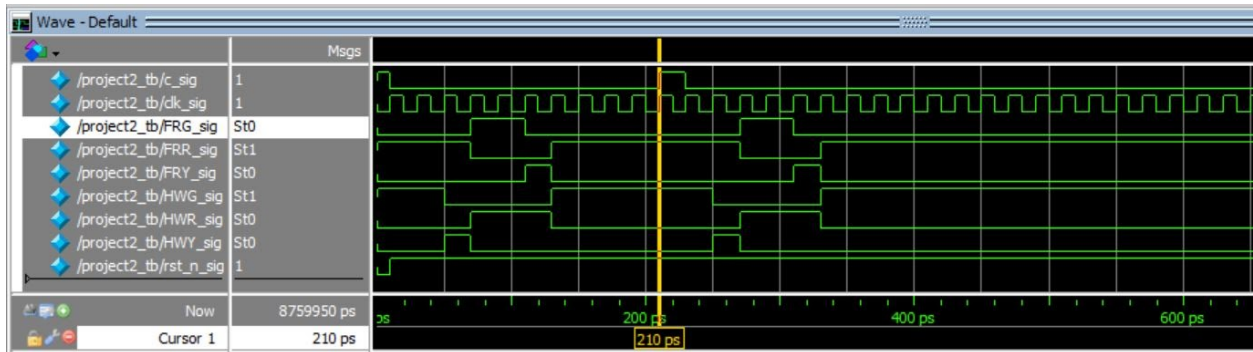

Case 2

Description: two vehicles are sensed on the farm road, both are able to cross during the initial interval

Case 3

Description: two different vehicles are sensed on the farm road at two different times. When the second car is sensed on the farm road the initial interval for the first car has been long completed.
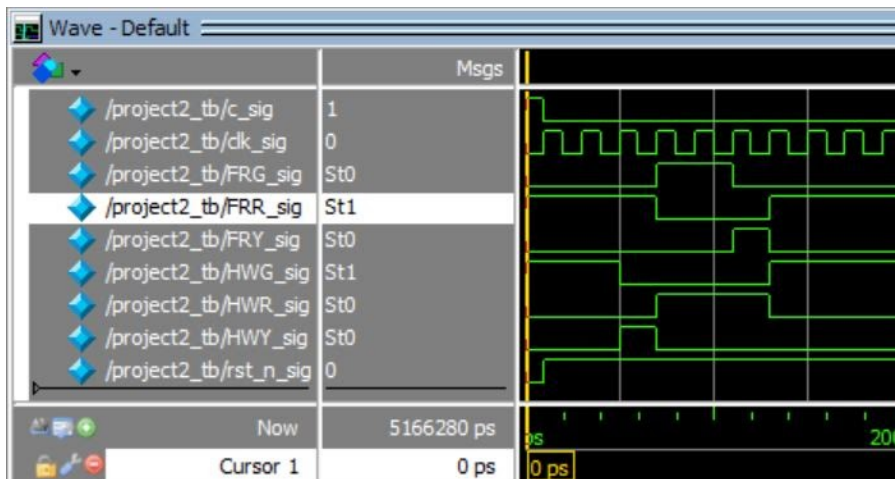

Case 4

Description: 1 vehicle is sensed in farm road, cycle completes. Highway light resumes green light. Second vehicle is sensed on the farm road. The negative edge triggered reset signal is activated while the farm road light is green. The result is the farm road light turns red and the highway light turns green. This happens with the traffic light controller bypassing the original set intervals and setting the lights into its default settings, which are green highway light and red farm road light.
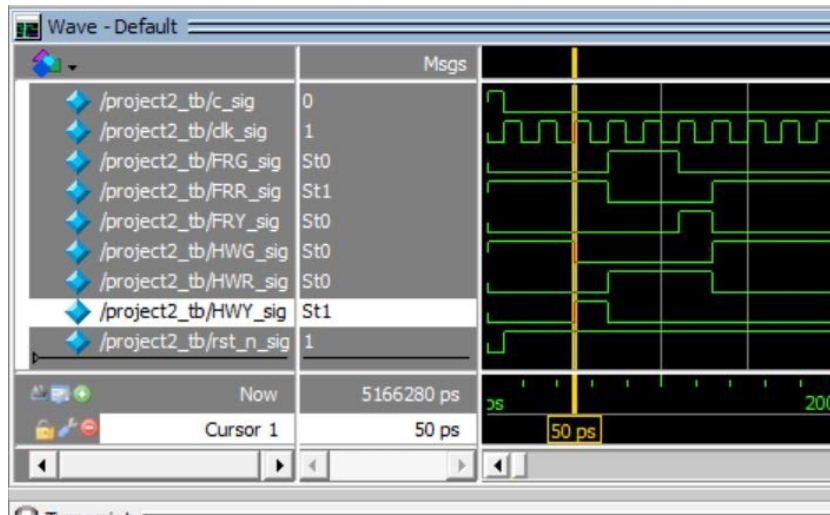

Note: the vertical yellow line signifies the moment the reset signal is activated.
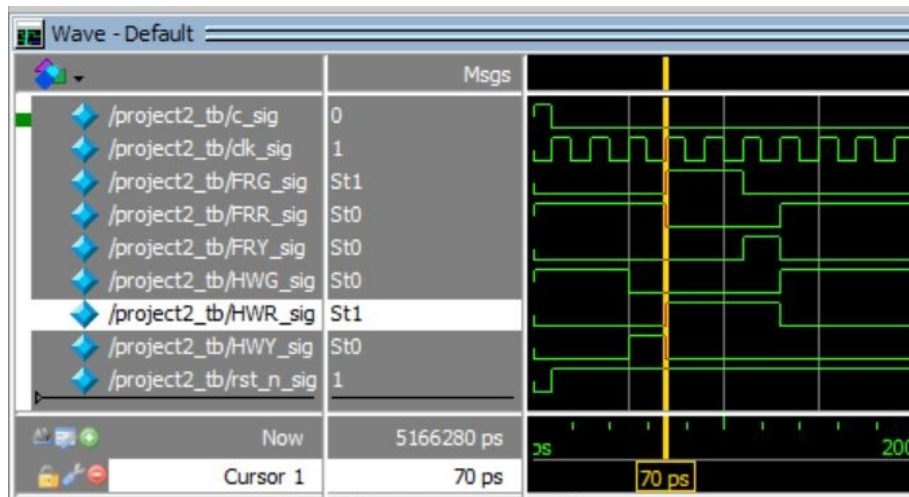
Highway green/ farm road red (initial state)

Highway yellow/ farm road red (second state)

Highway red/ farm road green (third state)

Highway red/ farm road yellow (fourth state)