driver_74ch595 Module

The driver_74ch595 module is designed to control two 74HC595 shift registers, enabling 16-bit serial-to-parallel conversion to manage an 8-digit 7-segment display with 8 segments each. By utilizing two 74HC595 chips, this design aims to save FPGA GPIO resources while effectively controlling the display.

Figure 1 shows the initial timing diagram I created, which forms the basis of the coding logic.

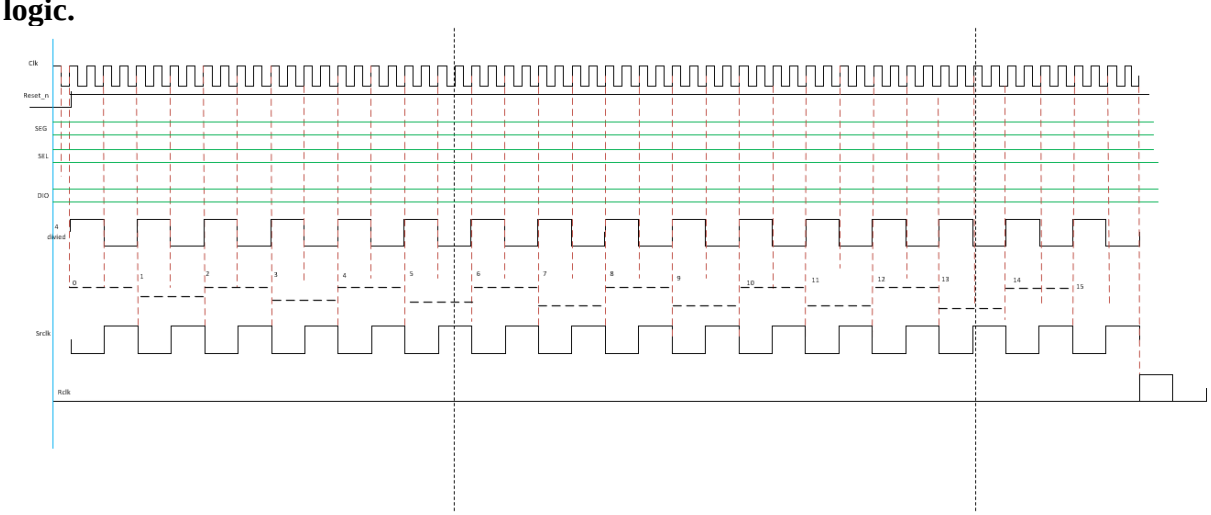

Figure1. The timing diagram for driving 74HC595

Figure 2 presents the emulation results, precisely reflecting the design logic.

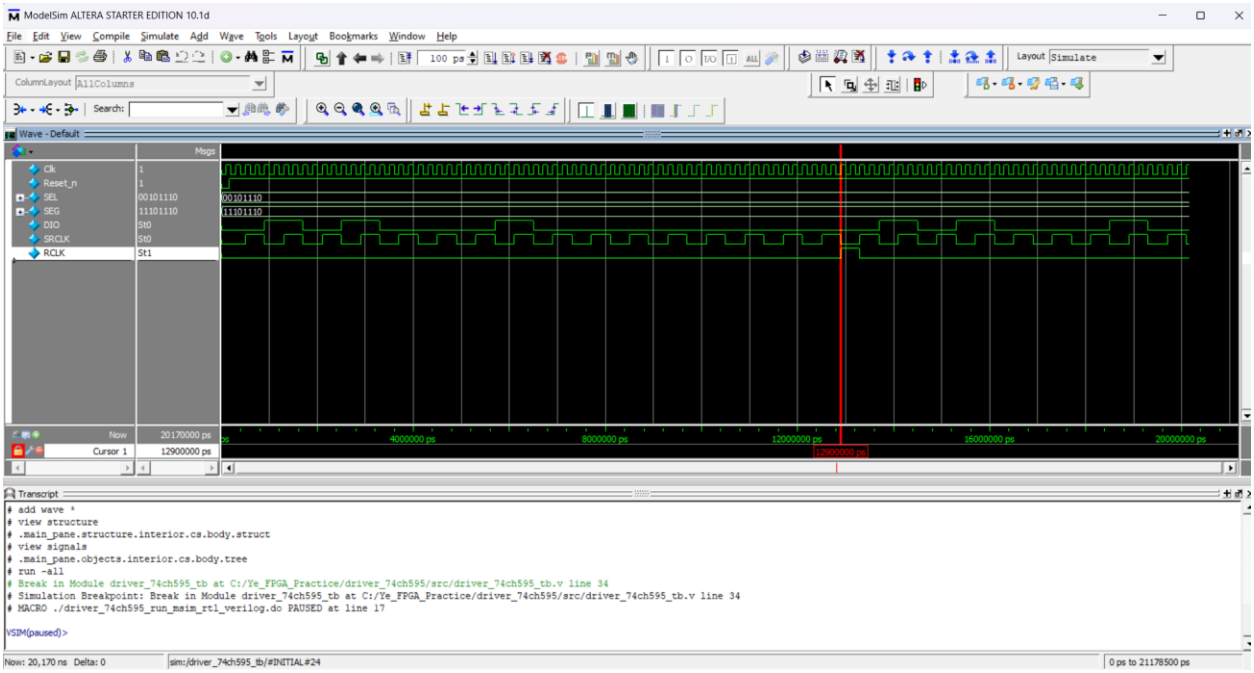

Figure 2. emulation results for driving 74HC595