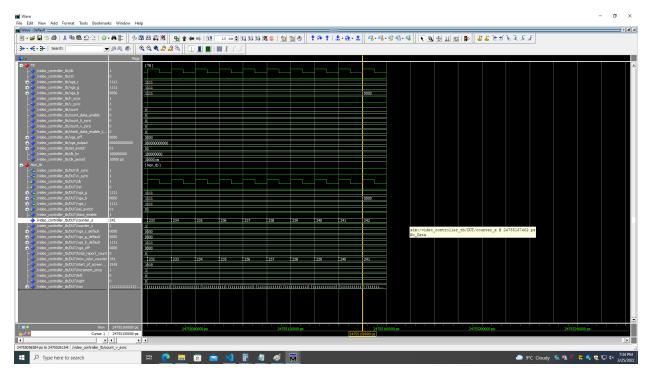
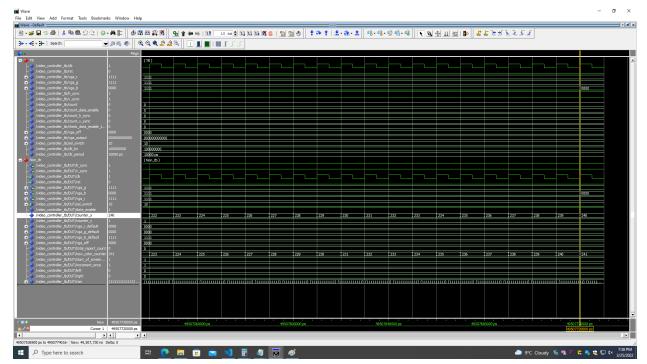


This shows the counter_x = 240 ending at the cursor, this is the end of the color white, the default non-shifted value.



This shows the counter_x = 241 ending at the cursor, this is the end of the color white, shifted by 1 since counter_x is now 241 instead of 240.



This shows the counter_x = 239 ending at the cursor, this is the end of the color white, shifted by 1 since counter_x is now 239 instead of 240.

You can see the colors at the top of the waveform (vga_r 111), moreover the assert statements within the testbench will prove this is happening in real_time. Counter_x tracks the relative x position of the pixel we are writing to.