module pixel\_gen(clk, pixel\_x, pixel\_y, video\_on, display\_x, red, green, blue);

input clk;

input [9:0] pixel\_x;

input [9:0] pixel\_y;

input video\_on;

// input reset; //reset button

// input RxD; // input signal wire

input [9:0] display\_x;

output reg [3:0]red = 0;

output reg [3:0]green = 0;

output reg [3:0]blue = 0;

// reg [7:0] RxData;

// reg [9:0] display\_x = 300;

reg [9:0] display\_x1;

reg [9:0] display\_x2;

reg ball;

reg paddle;

// reg [22:0] counter = 0;

always @(posedge clk)

begin

// counter <= counter + 1;

if ((pixel\_x == 0) || (pixel\_x == 639) || (pixel\_y == 0) || (pixel\_y == 479))

begin

red <= 4'hF;

green <= 4'hF;

blue <= 4'hF;

end

else

begin

display\_x1 <= display\_x - 50;

display\_x2 <= display\_x + 50;

paddle = pixel\_y > 450 && pixel\_y < 470 && pixel\_x > display\_x1 && pixel\_x < display\_x2;

ball = pixel\_y > 230 && pixel\_y < 250 && pixel\_x > 310 && pixel\_x < 330;

blue <= video\_on ? ((ball || paddle) ? 4'hF : 4'h0) : 4'h0;

red <= 4'h0;

green <= video\_on ? ((ball || paddle) ? 4'hF : 4'h0) : 4'h0;

// blue <= video\_on ? ((pixel\_y > 450 && pixel\_y < 470 && pixel\_x > display\_x1 && pixel\_x < display\_x2) ? 4'hF : 4'h0) : 4'h0;

// red <= 4'h0;

// green <= video\_on ? ((pixel\_y > 450 && pixel\_y < 470 && pixel\_x > display\_x1 && pixel\_x < display\_x2) ? 4'hF : 4'h0) : 4'h0;

end

// if (display\_x2 > 639) begin

// display\_x1 <= 0;

// display\_x2 <= 100;

// end

// if (counter >= 4999999) begin

// counter <= 0;

// end

end

endmodule