

```
timescale 1ns / 1ps
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
// Company:
// Engineer:
//
// Create Date: 03/03/2020 01:35:28 AM
// Design Name:
// Module Name: crash_check
// Project Name:
// Target Devices:
// Tool Versions:
// Description:
//
// Dependencies:
//
// Revision:
// Revision 0.01 - File Created
// Additional Comments:
//
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
```

```
module crash_check(
    input [23:0]seg,
    input[11:0] hCount, vCount, width,
    output check
);
    wire [11:0] xRef, yRef;
    wire [11:0] halfWidth = width/2;
    assign xRef = seg[23:12];
    assign yRef = seg[11:0];
    wire yLow, xLow, yHigh, xHigh;
    assign yLow = (10'd400 < (yRef+10'd16));
    assign yHigh = (10'd400 > (yRef-10'd81));
    assign xLow = (10'd320 > (xRef-(11'd9 + halfWidth)));
    assign xHigh = (10'd320 < (xRef + 11'd9 + halfWidth));

    assign check = yLow & yHigh & xLow & xHigh;
endmodule
```