

timescale 1ns / 1ps

```
module Border(  
    input clk,  
    input [15:0] Horizontal, Vertical, // Horizontal is thickness of left and right  
                                         // Vertical is thickness of top and bottom  
  
    output top, bottom, left, right,  
    output GreenWall  
);  
  
    // Active region size  
    wire [15:0] HborderStart, HborderEnd, VborderStart, VborderEnd, zero;  
    assign zero = 16'd0;  
    assign HborderStart = 16'd632; // Start of right side border (green wall)  
    assign HborderEnd = 16'd639; // Length  
    assign VborderStart = 16'd472; // Start of bottom border  
    assign VborderEnd = 16'd479; // Height  
  
    assign top = ((Horizontal >= zero) & (Horizontal <= HborderEnd) &  
(Vertical >= zero) & (Vertical <= 16'd7));  
    assign bottom = ((Horizontal >= zero) & (Horizontal <= HborderEnd) &  
(Vertical >= VborderStart) & (Vertical <= VborderEnd));  
    assign left = ((Vertical >= zero) & (Vertical <= VborderEnd) &  
(Horizontal >= zero) & (Horizontal <= 16'd7));  
    assign right = ((Vertical >= zero) & (Vertical <= VborderEnd) &  
(Horizontal >= HborderStart) & (Horizontal <= HborderEnd));  
  
    assign GreenWall = (top | bottom | left | right);  
endmodule
```