

## TEST BENCH:

```
module ElevatorController_TB;
reg clk;
reg reset;
reg up_button;
reg down_button;
reg door_hold_button;
reg [3:0] desired_floor;
reg emergency_stop;
wire door_hold_active;
wire [2:0] display_panel;
ElevatorController uut ( .clk(clk), .reset(reset), .up_button(up_button), .down_button(down_button),
    .door_hold_button(door_hold_button), .desired_floor(desired_floor),
    .emergency_stop(emergency_stop), .door_hold_active(door_hold_active),
    .display_panel(display_panel) );
// Clock generation
initial begin clk = 0;
forever #5 clk = ~clk;
end
initial begin
    reset = 1;
    up_button = 0;
    down_button = 0;
    desired_floor = 4'b0000;
    emergency_stop = 0;
    #10
    reset = 0;
    #20
    up_button = 1;
    #30
    desired_floor = 4'b0100;
    #50 up_button = 0;
    #80 desired_floor = 4'b0100;
    #100 down_button = 1;
    #150 desired_floor = 4'b0010;
    #180 down_button = 1;
    #200 desired_floor = 4'b0000;
    #210
    $finish;
    End
    initial begin
    #60 door_hold_button = 1;
    end
endmodule
```

WAVE FORM:

