數位系統導論既實習

班級:資工一乙
學號:CBB113234
姓名:詹幼綺

程式碼內容:

C:\SynaptiCAD\deecoder3_8.v

```
module decoder3_8(y,d);
output[7:0]y;
input[2:0]d;
assign y[0]=((~d[2])&(~d[1])&(~d[0])),
 y[1]=((~d[2])&(~d[1])&(d[0])),

 y[2]=((~d[2])&(d[1])&(~d[0])),

 y[3]=((~d[2])&(d[1])&(d[0])),

 y[4]=((d[2])&(~d[1])&(~d[0])),

 y[5]=((d[2])&(~d[1])&(d[0])),

 y[6]=((d[2])&(d[1])&(~d[0])),

 y[7]=((d[2])&(d[1])&(d[0]));

 endmodule
```

INS Row: 22 Line: 22 Col: 1

C:\SynaptiCAD\Hamming_decod...

```
module Hamming_decode(Err,D,H);
output Err;
output[3:0]D;
input[6:0]H;
wire[2:0]E;
wire[7:0]H_cor ,Cor;
xor(E[2],H[6],H[5],H[4],H[3]);
xor(E[1],H[6],H[5],H[2],H[1]);
xor(E[0],H[6],H[4],H[2],H[0]);
or (Err,E[2],E[1],E[0]);
decoder3_8 decoder(Cor,E);
assign H_cor=H^Cor[7:1];
assign D={H_cor[6],H_cor[5],H_cor[4],H_cor
endmodule
```

INS Row: 14 Line: 14 Col: 11

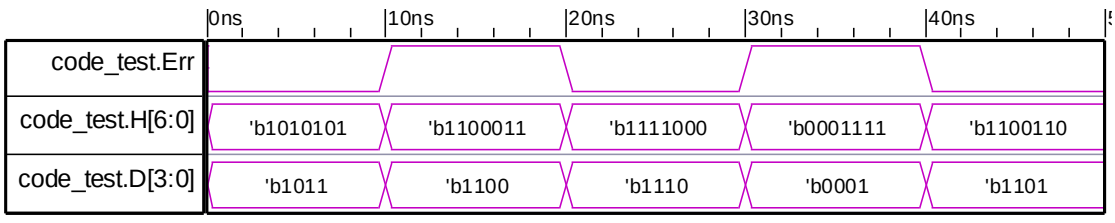
測試檔內容:

C:\SynaptiCAD\test.v

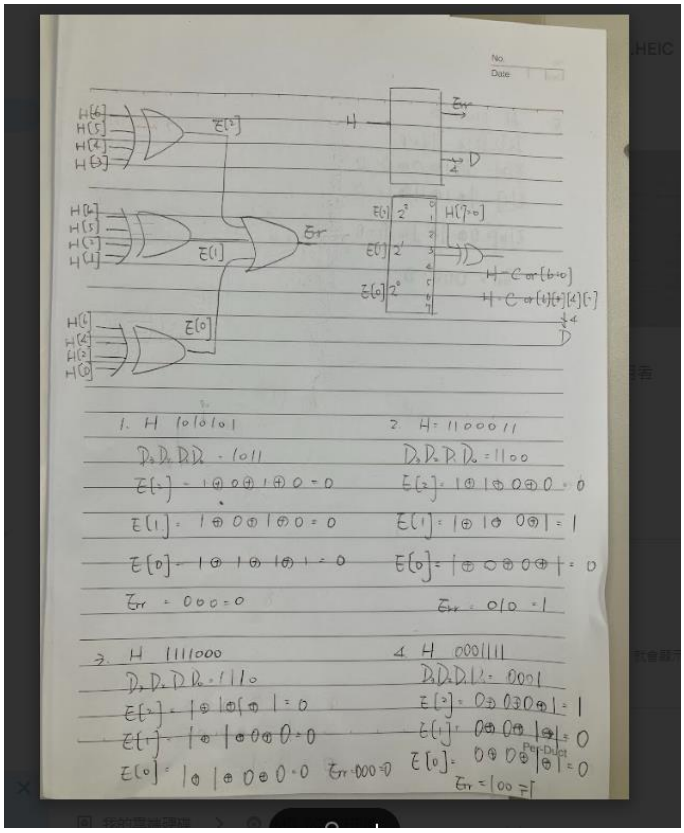
```
module code_test;


wire Err;
wire[3:0]D;
reg[6:0]H;


Hamming_decode m(Err,D,H);

initial begin
    H=7'b1010101;
    #10 H=7'b1100011;
    #10 H=7'b1011010;
    #10 H=7'b0101111;
    #10 H=7'b1101010;

    #10 $finish;

end
   endmodule
```

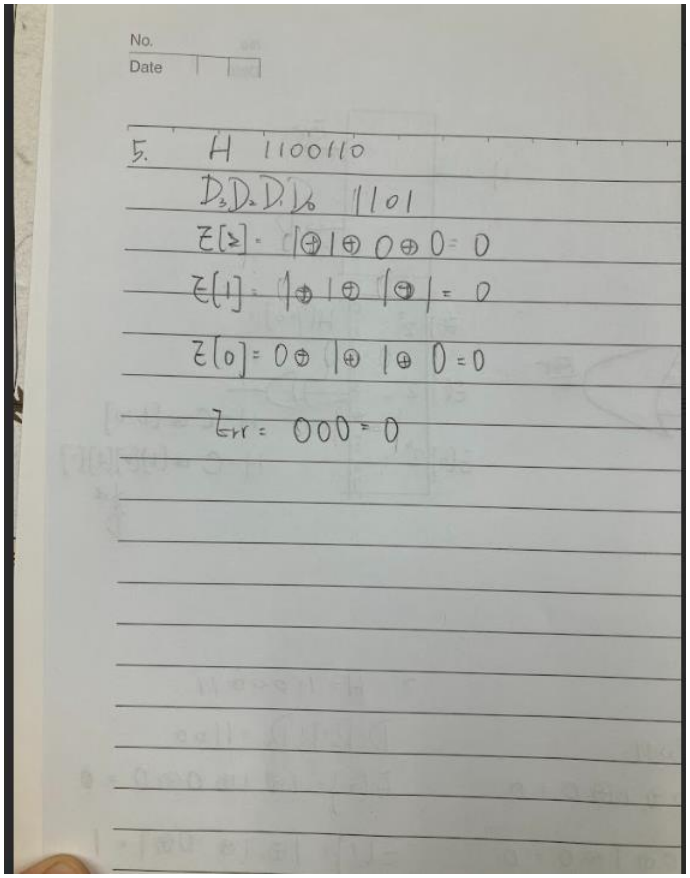
INS Row: 14 Line: 14 Col: 20

波形圖:



手寫測試檔:


No.
Date
H
Err
D
E[2]
E[1]
E[0]
H[7:0]
1. H 1010101
D3D2D1D0 = 1011
E[2] = 1⊕0⊕1⊕0 = 0
E[1] = 1⊕0⊕1⊕0 = 0
E[0] = 1⊕1⊕1⊕1 = 0
Err = 000 = 0
2. H = 1100011
D3D2D1D0 = 1100
E[2] = 1⊕1⊕0⊕0 = 0
E[1] = 1⊕1⊕0⊕1 = 1
E[0] = 1⊕0⊕0⊕1 = 0
Err = 010 = 1
3. H 1111000
D3D2D1D0 = 1110
E[2] = 1⊕1⊕1⊕0 = 0
E[1] = 1⊕1⊕0⊕0 = 0
E[0] = 1⊕1⊕0⊕0 = 0
Err = 000 = 0
4. H 0001111
D3D2D1D0 = 0001
E[2] = 0⊕0⊕0⊕1 = 1
E[1] = 0⊕0⊕0⊕1 = 0
E[0] = 0⊕0⊕0⊕1 = 0
Err = 100 = 4


No.
Date
5. H 1100110
D3D2D1D0 1101
E[2] = 1⊕1⊕0⊕0 = 0
E[1] = 1⊕1⊕1⊕1 = 0
E[0] = 0⊕1⊕1⊕0 = 0
Err = 000 = 0

心得:
Ok!