module se14 (clk,rst,write,addr,wdata,pushin,datain,entrophy,pushout,dataout);

//Port declarations

input pushin;

input [7:0] datain;

input [31:0] entrophy;

output pushout;

output [31:0] dataout;

input [11:0] addr;

input clk ;

input rst ;

input write;

input [31:0] wdata;

//Internal signal declaration

wire [449:0] Poly0;

wire [184:0] Poly1;

wire [42:0] Poly2;

wire [72:0] Poly3;

wire [85:0] Poly4;

wire [300:0] Poly5;

wire [527:0] Poly6;

wire [211:0] Poly7;

wire [69:0] Poly8;

wire [126:0] Poly9;

wire [49:0] Poly10;

wire [52:0] Poly11;

wire [146:0] Poly12;

wire [197:0] Poly13;

wire [63:0] Poly14;

wire [115:0] Poly15;

wire [63:0] dataselector;

wire [449:0] P0;

wire [184:0] P1;

wire [42:0] P2;

wire [72:0] P3;

wire [85:0] P4;

wire [300:0] P5;

wire [527:0] P6;

wire [211:0] P7;

wire [69:0] P8;

wire [126:0] P9;

wire [49:0] P10;

wire [52:0] P11;

wire [146:0] P12;

wire [197:0] P13;

wire [63:0] P14;

wire [115:0] P15;

wire [63:0] DS;

wire [4:0] sel1, sel2;

wire [6:0] xor\_data;

reg [4:0] sel1\_d1, sel2\_d1;

//Data and Entrophy pipeline

reg [7:0] datain\_d1;

reg [7:0] datain\_d2;

reg [31:0] entrophy\_d1;

reg [31:0] entrophy\_d2;

reg [31:0] initialScramble;

reg [15:0] dataScramble;

wire [31:0] tempInitialScramble;

wire [15:0] tempDataScramble;

reg [31:0] initialScramble\_d1;

reg [15:0] dataScramble\_d1;

reg [31:0] dataout\_d1;

reg write\_d1;

//Pipeline for pushin

reg pushin\_d1;

reg pushin\_d2;

reg pushin\_d3;

reg pushin\_d4;

//Pipeline for pushout

reg pushout\_d1;

reg pushout\_d2;

reg pushout\_d3;

reg pushout\_d4;

//Pipeline for Primary LFSR outputs

reg [449:0] P0\_d1;

reg [184:0] P1\_d1;

reg [42:0] P2\_d1;

reg [72:0] P3\_d1;

reg [85:0] P4\_d1;

reg [300:0] P5\_d1;

reg [527:0] P6\_d1;

reg [211:0] P7\_d1;

reg [69:0] P8\_d1;

reg [126:0] P9\_d1;

reg [49:0] P10\_d1;

reg [52:0] P11\_d1;

reg [146:0] P12\_d1;

reg [197:0] P13\_d1;

reg [63:0] P14\_d1;

reg [115:0] P15\_d1;

reg [63:0] DS\_d1;

//Pipeline 2 for Primary LFSR outputs

reg [449:0] P0\_d2;

reg [184:0] P1\_d2;

reg [42:0] P2\_d2;

reg [72:0] P3\_d2;

reg [85:0] P4\_d2;

reg [300:0] P5\_d2;

reg [527:0] P6\_d2;

reg [211:0] P7\_d2;

reg [69:0] P8\_d2;

reg [126:0] P9\_d2;

reg [49:0] P10\_d2;

reg [52:0] P11\_d2;

reg [146:0] P12\_d2;

reg [197:0] P13\_d2;

reg [63:0] P14\_d2;

reg [115:0] P15\_d2;

reg [63:0] DS\_d2;

primary\_lsfr0 L0 (.clk(clk), .reset(rst), .write(write), .pushin(pushin), .InitialData0(Poly0),.rnd1(P0));

primary\_lsfr1 L1 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData1(Poly1),.rnd1(P1));

primary\_lsfr2 L2 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData2(Poly2),.rnd1(P2));

primary\_lsfr3 L3 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData3(Poly3),.rnd1(P3));

primary\_lsfr4 L4 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData4(Poly4),.rnd1(P4));

primary\_lsfr5 L5 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData5(Poly5),.rnd1(P5));

primary\_lsfr6 L6 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData6(Poly6),.rnd1(P6));

primary\_lsfr7 L7 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData7(Poly7),.rnd1(P7));

primary\_lsfr8 L8 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData8(Poly8),.rnd1(P8));

primary\_lsfr9 L9 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData9(Poly9),.rnd1(P9));

primary\_lsfr10 L10 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData10(Poly10),.rnd1(P10));

primary\_lsfr11 L11 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData11(Poly11),.rnd1(P11));

primary\_lsfr12 L12 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData12(Poly12),.rnd1(P12));

primary\_lsfr13 L13 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData13(Poly13),.rnd1(P13));

primary\_lsfr14 L14 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData14(Poly14),.rnd1(P14));

primary\_lsfr15 L15 (.clk(clk),.reset(rst), .write(write), .pushin(pushin), .InitialData15(Poly15),.rnd1(P15));

dataSelectLFSR data\_select(.clk(clk),.reset(rst), .write(write\_d1), .pushin(pushin\_d1), .data(xor\_data),.initialData(dataselector),.rnd1(DS));

scramblerLFSR sl(.clk(clk),.reset(rst), .pushin(pushin\_d3), .data(dataScramble\_d1),.initialData(initialScramble\_d1),.rnd1(dataout\_d1));

initialize\_scrambler write\_data(.clk(clk),.reset(rst),.write(write),.lfsrdin(wdata),.addr(addr),.dataselector(dataselector),.Poly0(Poly0),.Poly1(Poly1),.Poly2(Poly2),.Poly3(Poly3),.Poly4(Poly4),.Poly5(Poly5),.Poly6(Poly6),.Poly7(Poly7),.Poly8(Poly8),.Poly9(Poly9),.Poly10(Poly10),.Poly11(Poly11),.Poly12(Poly12),.Poly13(Poly13),.Poly14(Poly14),.Poly15(Poly15));

assign dataout = dataout\_d1;

assign pushout = pushout\_d4;

assign xor\_data = {P1\_d1[178],P1\_d1[179],P1\_d1[180],P1\_d1[181],P1\_d1[182],P1\_d1[183],P1\_d1[184]};

assign sel1 = {DS[10],DS[0],DS[51],DS[42],DS[28]};

assign sel2 = {DS[29],DS[31],DS[8],DS[19],DS[61]};

//Sequential Block

always @ (posedge clk or posedge rst)

begin

if (rst)

begin

//initialScramble<= #1 0;

//dataScramble<= #1 0;

initialScramble\_d1<= #1 0;

dataScramble\_d1<= #1 0;

//Pipeline for pushout signal

pushout\_d1<= #1 0;

pushout\_d2<= #1 0;

pushout\_d3<= #1 0;

pushout\_d4<= #1 0;

//Pipeline for pushin signal

pushin\_d1 <= #1 0;

pushin\_d2 <= #1 0;

pushin\_d3 <= #1 0;

pushin\_d4 <= #1 0;

//Pipeline for datain signal

datain\_d1 <= #1 0;

datain\_d2 <= #1 0;

//Pipeline for entrophy signal

entrophy\_d1 <= #1 0;

entrophy\_d2 <= #1 0;

//Pipeline for Primary LFSR outputs

P0\_d1 <= #1 0;

P1\_d1 <= #1 0;

P2\_d1 <= #1 0;

P3\_d1 <= #1 0;

P4\_d1 <= #1 0;

P5\_d1 <= #1 0;

P6\_d1 <= #1 0;

P7\_d1 <= #1 0;

P8\_d1 <= #1 0;

P9\_d1 <= #1 0;

P10\_d1 <= #1 0;

P11\_d1 <= #1 0;

P12\_d1 <= #1 0;

P13\_d1 <= #1 0;

P14\_d1 <= #1 0;

P15\_d1 <= #1 0;

DS\_d1 <= #1 0;

sel1\_d1 <= #1 0;

sel2\_d1 <= #1 0;

P0\_d2 <= #1 0;

P1\_d2 <= #1 0;

P2\_d2 <= #1 0;

P3\_d2 <= #1 0;

P4\_d2 <= #1 0;

P5\_d2 <= #1 0;

P6\_d2 <= #1 0;

P7\_d2 <= #1 0;

P8\_d2 <= #1 0;

P9\_d2 <= #1 0;

P10\_d2 <= #1 0;

P11\_d2 <= #1 0;

P12\_d2 <= #1 0;

P13\_d2 <= #1 0;

P14\_d2 <= #1 0;

P15\_d2 <= #1 0;

DS\_d2 <= #1 0;

write\_d1 <= #1 0;

end

else

begin

initialScramble\_d1<= #1 initialScramble;

dataScramble\_d1<= #1 dataScramble;

//Pipeline for pushout signal

pushout\_d1<= #1 pushin;

pushout\_d2<= #1 pushout\_d1;

pushout\_d3<= #1 pushout\_d2;

pushout\_d4<= #1 pushout\_d3;

//Pipeline for pushin signal

pushin\_d1 <= #1 pushin;

pushin\_d2 <= #1 pushin\_d1;

pushin\_d3 <= #1 pushin\_d2;

pushin\_d4 <= #1 pushin\_d3;

//Pipeline for datain signal

datain\_d1 <= #1 datain;

datain\_d2 <= #1 datain\_d1;

//Pipeline for entrophy signal

entrophy\_d1 <= #1 entrophy;

entrophy\_d2 <= #1 entrophy\_d1;

//Pipeline for Primary LFSR outputs

P0\_d1 <= #1 P0;

P1\_d1 <= #1 P1;

P2\_d1 <= #1 P2;

P3\_d1 <= #1 P3;

P4\_d1 <= #1 P4;

P5\_d1 <= #1 P5;

P6\_d1 <= #1 P6;

P7\_d1 <= #1 P7;

P8\_d1 <= #1 P8;

P9\_d1 <= #1 P9;

P10\_d1 <= #1 P10;

P11\_d1 <= #1 P11;

P12\_d1 <= #1 P12;

P13\_d1 <= #1 P13;

P14\_d1 <= #1 P14;

P15\_d1 <= #1 P15;

DS\_d1 <= #1 DS;

P0\_d2 <= #1 P0\_d1;

P1\_d2 <= #1 P1\_d1;

P2\_d2 <= #1 P2\_d1;

P3\_d2 <= #1 P3\_d1;

P4\_d2 <= #1 P4\_d1;

P5\_d2 <= #1 P5\_d1;

P6\_d2 <= #1 P6\_d1;

P7\_d2 <= #1 P7\_d1;

P8\_d2 <= #1 P8\_d1;

P9\_d2 <= #1 P9\_d1;

P10\_d2 <= #1 P10\_d1;

P11\_d2 <= #1 P11\_d1;

P12\_d2 <= #1 P12\_d1;

P13\_d2 <= #1 P13\_d1;

P14\_d2 <= #1 P14\_d1;

P15\_d2 <= #1 P15\_d1;

DS\_d2 <= #1 DS\_d1;

sel1\_d1 <= #1 sel1;

sel2\_d1 <= #1 sel2;

write\_d1 <= #1 write;

end

/\*

else

begin

initialScramble<= #1 initialScramble;

dataScramble<= #1 dataScramble;

//Pipeline for pushout signal

pushout\_d1<= #1 pushin;

pushout\_d2<= #1 pushout\_d1;

pushout\_d3<= #1 pushout\_d2;

pushout\_d4<= #1 pushout\_d3;

//Pipeline for pushin signal

pushin\_d1 <= #1 pushin;

pushin\_d2 <= #1 pushin\_d1;

pushin\_d3 <= #1 pushin\_d2;

pushin\_d4 <= #1 pushin\_d3;

//Pipeline for datain signal

datain\_d1 <= #1 datain\_d1;

datain\_d2 <= #1 datain\_d2;

//Pipeline for entrophy signal

entrophy\_d1 <= #1 entrophy\_d1;

entrophy\_d2 <= #1 entrophy\_d1;

//Pipeline for Primary LFSR outputs

P0\_d1 <= #1 P0\_d1;

P1\_d1 <= #1 P1\_d1;

P2\_d1 <= #1 P2\_d1;

P3\_d1 <= #1 P3\_d1;

P4\_d1 <= #1 P4\_d1;

P5\_d1 <= #1 P5\_d1;

P6\_d1 <= #1 P6\_d1;

P7\_d1 <= #1 P7\_d1;

P8\_d1 <= #1 P8\_d1;

P9\_d1 <= #1 P9\_d1;

P10\_d1 <= #1 P10\_d1;

P11\_d1 <= #1 P11\_d1;

P12\_d1 <= #1 P12\_d1;

P13\_d1 <= #1 P13\_d1;

P14\_d1 <= #1 P14\_d1;

P15\_d1 <= #1 P15\_d1;

end\*/

end

//Combinational Block

always @ (\*)

begin

initialScramble = #0 0;

dataScramble = #0 0;

if (pushin\_d2)

begin

case (sel1\_d1)

0: initialScramble = #0 {entrophy\_d2[31],entrophy\_d2[29],entrophy\_d2[8],entrophy\_d2[20],entrophy\_d2[16],entrophy\_d2[13],entrophy\_d2[3],entrophy\_d2[30],entrophy\_d2[4],datain\_d2[1],entrophy\_d2[26],entrophy\_d2[12],entrophy\_d2[14]

,datain\_d2[2],entrophy\_d2[17],entrophy\_d2[10],entrophy\_d2[9],datain\_d2[0],entrophy\_d2[18],datain\_d2[7],entrophy\_d2[7],entrophy\_d2[25],entrophy\_d2[15],datain\_d2[4]

,entrophy\_d2[19],entrophy\_d2[24],datain\_d2[6],entrophy\_d2[1],datain\_d2[5],datain\_d2[3],entrophy\_d2[0],entrophy\_d2[21]};

1: initialScramble = #0 {datain\_d2[2],entrophy\_d2[15],entrophy\_d2[20],datain\_d2[1],entrophy\_d2[14],entrophy\_d2[21],datain\_d2[0],entrophy\_d2[7],entrophy\_d2[0],entrophy\_d2[12],entrophy\_d2[25],datain\_d2[3]

,entrophy\_d2[1],entrophy\_d2[13],datain\_d2[4],datain\_d2[6],entrophy\_d2[19],entrophy\_d2[11],entrophy\_d2[10],datain\_d2[5],datain\_d2[7],entrophy\_d2[8],entrophy\_d2[23]

,entrophy\_d2[30],entrophy\_d2[28],entrophy\_d2[17],entrophy\_d2[29],entrophy\_d2[2],entrophy\_d2[16],entrophy\_d2[5],entrophy\_d2[4],entrophy\_d2[31]};

2: initialScramble = #0 {entrophy\_d2[0],entrophy\_d2[27],entrophy\_d2[15],entrophy\_d2[1],entrophy\_d2[16],entrophy\_d2[10],entrophy\_d2[3],entrophy\_d2[6],entrophy\_d2[17],datain\_d2[0],datain\_d2[4],datain\_d2[1]

,entrophy\_d2[23],entrophy\_d2[24],entrophy\_d2[12],datain\_d2[2],entrophy\_d2[31],entrophy\_d2[30],entrophy\_d2[2],datain\_d2[6],entrophy\_d2[28],datain\_d2[5],entrophy\_d2[8]

,datain\_d2[7],entrophy\_d2[21],entrophy\_d2[29],datain\_d2[3],entrophy\_d2[9],entrophy\_d2[4],entrophy\_d2[5],entrophy\_d2[7],entrophy\_d2[13]};

3: initialScramble = #0 {entrophy\_d2[20],entrophy\_d2[28],entrophy\_d2[31],datain\_d2[6],datain\_d2[0],entrophy\_d2[15],datain\_d2[3],entrophy\_d2[1],entrophy\_d2[0],entrophy\_d2[16],datain\_d2[5]

,entrophy\_d2[10],entrophy\_d2[3],entrophy\_d2[4],entrophy\_d2[5],entrophy\_d2[22],datain\_d2[4],entrophy\_d2[17],entrophy\_d2[19],entrophy\_d2[26],entrophy\_d2[2],datain\_d2[7],datain\_d2[1]

,entrophy\_d2[12],entrophy\_d2[7],entrophy\_d2[18],entrophy\_d2[24],datain\_d2[2],entrophy\_d2[29],entrophy\_d2[11],entrophy\_d2[14],entrophy\_d2[23]};

4: initialScramble = #0 {entrophy\_d2[11],entrophy\_d2[15],datain\_d2[2],entrophy\_d2[22],entrophy\_d2[31],entrophy\_d2[9],datain\_d2[6],entrophy\_d2[26],entrophy\_d2[10],datain\_d2[1],entrophy\_d2[29],entrophy\_d2[17]

,datain\_d2[7],entrophy\_d2[20],entrophy\_d2[24],datain\_d2[5],entrophy\_d2[0],entrophy\_d2[2],entrophy\_d2[5],entrophy\_d2[1],datain\_d2[4],entrophy\_d2[14],entrophy\_d2[3],entrophy\_d2[7]

,datain\_d2[0],entrophy\_d2[21],entrophy\_d2[6],entrophy\_d2[8],entrophy\_d2[23],entrophy\_d2[13],datain\_d2[3],entrophy\_d2[4]};

5: initialScramble = #0 {datain\_d2[7],entrophy\_d2[14],entrophy\_d2[3],datain\_d2[5],entrophy\_d2[17],datain\_d2[0],entrophy\_d2[13],datain\_d2[1],entrophy\_d2[12],entrophy\_d2[29],entrophy\_d2[20]

,entrophy\_d2[18],entrophy\_d2[5],entrophy\_d2[11],entrophy\_d2[30],entrophy\_d2[9],entrophy\_d2[26],entrophy\_d2[24],entrophy\_d2[21],entrophy\_d2[8],entrophy\_d2[15],entrophy\_d2[7],entrophy\_d2[25],datain\_d2[3],entrophy\_d2[19],entrophy\_d2[31],entrophy\_d2[0],datain\_d2[6],entrophy\_d2[6],datain\_d2[2],datain\_d2[4],entrophy\_d2[23]};

6: initialScramble = #0 {entrophy\_d2[4],entrophy\_d2[11],entrophy\_d2[7],entrophy\_d2[1],entrophy\_d2[9],entrophy\_d2[3],entrophy\_d2[5],entrophy\_d2[2],entrophy\_d2[24],entrophy\_d2[13],entrophy\_d2[18],datain\_d2[7],entrophy\_d2[28]

,entrophy\_d2[0],entrophy\_d2[10],datain\_d2[6],datain\_d2[1],entrophy\_d2[27],entrophy\_d2[29],entrophy\_d2[30],datain\_d2[0],datain\_d2[5],entrophy\_d2[31],entrophy\_d2[6]

,datain\_d2[2],entrophy\_d2[21],entrophy\_d2[22],entrophy\_d2[25],entrophy\_d2[16],datain\_d2[3],datain\_d2[4],entrophy\_d2[8]};

7: initialScramble = #0 {entrophy\_d2[12],entrophy\_d2[1],entrophy\_d2[11],datain\_d2[3],entrophy\_d2[15],entrophy\_d2[18],entrophy\_d2[2],datain\_d2[4],entrophy\_d2[20],datain\_d2[1],datain\_d2[5]

,entrophy\_d2[0],datain\_d2[2],entrophy\_d2[19],entrophy\_d2[31],datain\_d2[0],entrophy\_d2[7],entrophy\_d2[16],datain\_d2[7],entrophy\_d2[9],entrophy\_d2[29],entrophy\_d2[22],entrophy\_d2[23]

,entrophy\_d2[6],datain\_d2[6],entrophy\_d2[25],entrophy\_d2[21],entrophy\_d2[13],entrophy\_d2[5],entrophy\_d2[14],entrophy\_d2[3],entrophy\_d2[27]};

8: initialScramble = #0 {datain\_d2[5],entrophy\_d2[19],entrophy\_d2[29],entrophy\_d2[16],entrophy\_d2[22],datain\_d2[3],entrophy\_d2[26],datain\_d2[4],entrophy\_d2[1],entrophy\_d2[31],entrophy\_d2[3],entrophy\_d2[2]

,entrophy\_d2[21],entrophy\_d2[10],entrophy\_d2[17],entrophy\_d2[15],datain\_d2[6],entrophy\_d2[28],entrophy\_d2[14],datain\_d2[1],entrophy\_d2[0],entrophy\_d2[7],datain\_d2[0]

,entrophy\_d2[30],entrophy\_d2[11],entrophy\_d2[27],entrophy\_d2[8],entrophy\_d2[23],entrophy\_d2[20],entrophy\_d2[4],datain\_d2[7],datain\_d2[2]};

9: initialScramble = #0 {entrophy\_d2[0],entrophy\_d2[5],entrophy\_d2[26],entrophy\_d2[1],datain\_d2[0],datain\_d2[2],entrophy\_d2[22],entrophy\_d2[31],entrophy\_d2[6],entrophy\_d2[27],datain\_d2[3],entrophy\_d2[18]

,entrophy\_d2[21],entrophy\_d2[8],entrophy\_d2[2],entrophy\_d2[14],entrophy\_d2[23],entrophy\_d2[19],entrophy\_d2[28],entrophy\_d2[13],entrophy\_d2[11],datain\_d2[1],datain\_d2[4],datain\_d2[7]

,entrophy\_d2[24],datain\_d2[6],entrophy\_d2[29],entrophy\_d2[16],entrophy\_d2[17],entrophy\_d2[25],entrophy\_d2[4],datain\_d2[5]};

10: initialScramble = #0 {entrophy\_d2[18],entrophy\_d2[31],entrophy\_d2[1],entrophy\_d2[27],entrophy\_d2[19],entrophy\_d2[3],datain\_d2[3],entrophy\_d2[12],entrophy\_d2[5],entrophy\_d2[23],datain\_d2[7],datain\_d2[6]

,entrophy\_d2[24],entrophy\_d2[30],entrophy\_d2[16],datain\_d2[0],entrophy\_d2[17],datain\_d2[4],entrophy\_d2[7],datain\_d2[2],entrophy\_d2[26],entrophy\_d2[29],entrophy\_d2[4]

,entrophy\_d2[11],entrophy\_d2[6],entrophy\_d2[15],entrophy\_d2[20],datain\_d2[5],entrophy\_d2[8],entrophy\_d2[14],entrophy\_d2[22],datain\_d2[1]};

11: initialScramble = #0 {datain\_d2[0],entrophy\_d2[15],entrophy\_d2[18],entrophy\_d2[14],entrophy\_d2[7],datain\_d2[7],datain\_d2[3],datain\_d2[2],entrophy\_d2[16],entrophy\_d2[13],entrophy\_d2[4]

,entrophy\_d2[28],entrophy\_d2[19],entrophy\_d2[5],entrophy\_d2[8],datain\_d2[5],datain\_d2[4],datain\_d2[1],entrophy\_d2[3],datain\_d2[6],entrophy\_d2[24],entrophy\_d2[17]

,entrophy\_d2[21],entrophy\_d2[22],entrophy\_d2[6],entrophy\_d2[27],entrophy\_d2[11],entrophy\_d2[23],entrophy\_d2[26],entrophy\_d2[29],entrophy\_d2[2],entrophy\_d2[20]};

12: initialScramble = #0 {entrophy\_d2[18],entrophy\_d2[6],entrophy\_d2[4],datain\_d2[0],datain\_d2[1],entrophy\_d2[1],entrophy\_d2[21],entrophy\_d2[13],entrophy\_d2[17],entrophy\_d2[16],datain\_d2[6],entrophy\_d2[28]

,entrophy\_d2[29],datain\_d2[2],entrophy\_d2[31],entrophy\_d2[12],entrophy\_d2[23],entrophy\_d2[9],entrophy\_d2[8],entrophy\_d2[5],entrophy\_d2[27],entrophy\_d2[30],entrophy\_d2[2],entrophy\_d2[24]

,datain\_d2[4],datain\_d2[5],datain\_d2[7],entrophy\_d2[26],datain\_d2[3],entrophy\_d2[15],entrophy\_d2[0],entrophy\_d2[19]};

13: initialScramble = #0 {entrophy\_d2[20],entrophy\_d2[2],entrophy\_d2[16],entrophy\_d2[6],entrophy\_d2[10],entrophy\_d2[22],datain\_d2[3],entrophy\_d2[3],datain\_d2[4],entrophy\_d2[30],entrophy\_d2[4],entrophy\_d2[1],entrophy\_d2[5]

,entrophy\_d2[11],datain\_d2[5],entrophy\_d2[19],entrophy\_d2[7],entrophy\_d2[31],entrophy\_d2[27],datain\_d2[7],entrophy\_d2[21],entrophy\_d2[25],entrophy\_d2[28],datain\_d2[1]

,entrophy\_d2[26],entrophy\_d2[13],datain\_d2[0],datain\_d2[6],datain\_d2[2],entrophy\_d2[12],entrophy\_d2[0],entrophy\_d2[18]};

14: initialScramble = #0 {entrophy\_d2[6],entrophy\_d2[21],entrophy\_d2[16],datain\_d2[6],entrophy\_d2[12],entrophy\_d2[28],entrophy\_d2[4],datain\_d2[7],entrophy\_d2[27],entrophy\_d2[26],entrophy\_d2[29],entrophy\_d2[2]

,entrophy\_d2[13],entrophy\_d2[18],datain\_d2[3],entrophy\_d2[11],datain\_d2[2],entrophy\_d2[0],entrophy\_d2[19],datain\_d2[5],entrophy\_d2[25],entrophy\_d2[8],entrophy\_d2[17]

,entrophy\_d2[7],datain\_d2[1],entrophy\_d2[31],datain\_d2[4],entrophy\_d2[24],entrophy\_d2[14],entrophy\_d2[20],entrophy\_d2[10],datain\_d2[0]};

15: initialScramble = #0 {datain\_d2[5],entrophy\_d2[29],entrophy\_d2[16],entrophy\_d2[18],entrophy\_d2[2],datain\_d2[0],entrophy\_d2[24],entrophy\_d2[26],entrophy\_d2[23],datain\_d2[4],datain\_d2[6]

,entrophy\_d2[11],datain\_d2[3],datain\_d2[1],entrophy\_d2[19],entrophy\_d2[0],entrophy\_d2[14],entrophy\_d2[15],entrophy\_d2[12],entrophy\_d2[25],datain\_d2[2],datain\_d2[7]

,entrophy\_d2[6],entrophy\_d2[3],entrophy\_d2[9],entrophy\_d2[27],entrophy\_d2[28],entrophy\_d2[20],entrophy\_d2[8],entrophy\_d2[31],entrophy\_d2[1],entrophy\_d2[30]};

16: initialScramble = #0 {entrophy\_d2[3],entrophy\_d2[31],entrophy\_d2[12],entrophy\_d2[15],entrophy\_d2[7],entrophy\_d2[5],entrophy\_d2[27],entrophy\_d2[25],entrophy\_d2[17],entrophy\_d2[28],datain\_d2[3],entrophy\_d2[20],datain\_d2[0]

,datain\_d2[4],entrophy\_d2[24],entrophy\_d2[16],entrophy\_d2[13],datain\_d2[6],entrophy\_d2[21],entrophy\_d2[0],entrophy\_d2[11],datain\_d2[5],datain\_d2[7],entrophy\_d2[1]

,entrophy\_d2[4],datain\_d2[2],entrophy\_d2[8],entrophy\_d2[9],entrophy\_d2[26],entrophy\_d2[10],entrophy\_d2[30],datain\_d2[1]};

17: initialScramble = #0 {entrophy\_d2[25],entrophy\_d2[4],datain\_d2[4],entrophy\_d2[14],entrophy\_d2[0],entrophy\_d2[18],datain\_d2[7],entrophy\_d2[7],datain\_d2[0],entrophy\_d2[1],datain\_d2[3],datain\_d2[2]

,datain\_d2[1],datain\_d2[5],entrophy\_d2[5],entrophy\_d2[22],entrophy\_d2[16],entrophy\_d2[12],entrophy\_d2[24],entrophy\_d2[17],entrophy\_d2[13],entrophy\_d2[29],entrophy\_d2[9],entrophy\_d2[11]

,entrophy\_d2[20],entrophy\_d2[30],entrophy\_d2[3],datain\_d2[6],entrophy\_d2[28],entrophy\_d2[8],entrophy\_d2[23],entrophy\_d2[26]};

18: initialScramble = #0 {entrophy\_d2[17],datain\_d2[3],entrophy\_d2[5],entrophy\_d2[8],entrophy\_d2[10],entrophy\_d2[2],entrophy\_d2[30],entrophy\_d2[23],datain\_d2[0],entrophy\_d2[3],datain\_d2[4],entrophy\_d2[15]

,entrophy\_d2[25],entrophy\_d2[9],entrophy\_d2[14],datain\_d2[6],datain\_d2[5],entrophy\_d2[1],datain\_d2[1],entrophy\_d2[18],entrophy\_d2[16],entrophy\_d2[28],datain\_d2[2]

,entrophy\_d2[4],entrophy\_d2[31],entrophy\_d2[21],entrophy\_d2[27],datain\_d2[7],entrophy\_d2[13],entrophy\_d2[22],entrophy\_d2[19],entrophy\_d2[26]};

19: initialScramble = #0 {entrophy\_d2[29],datain\_d2[6],datain\_d2[4],entrophy\_d2[9],entrophy\_d2[28],entrophy\_d2[4],entrophy\_d2[17],datain\_d2[5],entrophy\_d2[5],entrophy\_d2[26],entrophy\_d2[25],entrophy\_d2[8]

,datain\_d2[0],entrophy\_d2[3],entrophy\_d2[10],entrophy\_d2[12],entrophy\_d2[6],entrophy\_d2[27],datain\_d2[3],entrophy\_d2[22],entrophy\_d2[31],entrophy\_d2[0],datain\_d2[7],datain\_d2[1]

,entrophy\_d2[21],entrophy\_d2[20],entrophy\_d2[16],datain\_d2[2],entrophy\_d2[13],entrophy\_d2[11],entrophy\_d2[30],entrophy\_d2[18]};

20: initialScramble = #0 {entrophy\_d2[26],entrophy\_d2[7],datain\_d2[2],entrophy\_d2[5],entrophy\_d2[4],entrophy\_d2[8],entrophy\_d2[24],entrophy\_d2[20],entrophy\_d2[2],entrophy\_d2[15],entrophy\_d2[31],datain\_d2[1],entrophy\_d2[6]

,entrophy\_d2[3],entrophy\_d2[16],datain\_d2[7],entrophy\_d2[19],entrophy\_d2[21],entrophy\_d2[10],entrophy\_d2[23],entrophy\_d2[9],entrophy\_d2[28],datain\_d2[5],entrophy\_d2[12],entrophy\_d2[0]

,datain\_d2[6],entrophy\_d2[29],datain\_d2[0],datain\_d2[3],entrophy\_d2[13],entrophy\_d2[1],datain\_d2[4]};

21: initialScramble = #0 {entrophy\_d2[10],entrophy\_d2[20],entrophy\_d2[24],datain\_d2[0],entrophy\_d2[4],entrophy\_d2[21],entrophy\_d2[8],entrophy\_d2[17],entrophy\_d2[30],entrophy\_d2[6],entrophy\_d2[5],datain\_d2[6]

,entrophy\_d2[31],entrophy\_d2[3],datain\_d2[7],entrophy\_d2[0],datain\_d2[4],entrophy\_d2[27],entrophy\_d2[2],entrophy\_d2[13],datain\_d2[3],entrophy\_d2[23],datain\_d2[2]

,entrophy\_d2[26],entrophy\_d2[9],entrophy\_d2[25],datain\_d2[5],entrophy\_d2[29],entrophy\_d2[1],datain\_d2[1],entrophy\_d2[12],entrophy\_d2[11]};

22: initialScramble = #0 {entrophy\_d2[17],entrophy\_d2[30],entrophy\_d2[13],datain\_d2[3],entrophy\_d2[15],entrophy\_d2[14],datain\_d2[2],entrophy\_d2[12],datain\_d2[7],entrophy\_d2[18],entrophy\_d2[31]

,entrophy\_d2[22],entrophy\_d2[25],datain\_d2[0],entrophy\_d2[4],entrophy\_d2[8],entrophy\_d2[19],datain\_d2[6],entrophy\_d2[3],datain\_d2[5],entrophy\_d2[2],entrophy\_d2[28],entrophy\_d2[1]

,entrophy\_d2[6],entrophy\_d2[11],entrophy\_d2[5],datain\_d2[4],datain\_d2[1],entrophy\_d2[21],entrophy\_d2[20],entrophy\_d2[23],entrophy\_d2[27]};

23: initialScramble = #0 {entrophy\_d2[24],datain\_d2[7],entrophy\_d2[17],datain\_d2[4],entrophy\_d2[22],entrophy\_d2[19],datain\_d2[6],entrophy\_d2[30],entrophy\_d2[14],entrophy\_d2[28],entrophy\_d2[23]

,datain\_d2[1],datain\_d2[5],entrophy\_d2[7],entrophy\_d2[18],entrophy\_d2[11],entrophy\_d2[5],entrophy\_d2[27],entrophy\_d2[26],entrophy\_d2[2],entrophy\_d2[9],entrophy\_d2[25],entrophy\_d2[29]

,entrophy\_d2[16],entrophy\_d2[13],entrophy\_d2[6],entrophy\_d2[3],datain\_d2[3],datain\_d2[2],datain\_d2[0],entrophy\_d2[20],entrophy\_d2[12]};

24: initialScramble = #0 {entrophy\_d2[1],entrophy\_d2[24],datain\_d2[5],entrophy\_d2[3],entrophy\_d2[15],entrophy\_d2[10],entrophy\_d2[26],entrophy\_d2[31],entrophy\_d2[4],datain\_d2[4],entrophy\_d2[16],datain\_d2[6]

,entrophy\_d2[27],datain\_d2[0],entrophy\_d2[13],entrophy\_d2[29],entrophy\_d2[9],entrophy\_d2[8],entrophy\_d2[19],entrophy\_d2[22],entrophy\_d2[20],datain\_d2[3],entrophy\_d2[18],datain\_d2[2]

,datain\_d2[1],entrophy\_d2[23],entrophy\_d2[5],entrophy\_d2[7],entrophy\_d2[14],entrophy\_d2[25],entrophy\_d2[17],datain\_d2[7]};

25: initialScramble = #0 {entrophy\_d2[30],entrophy\_d2[17],datain\_d2[4],datain\_d2[3],entrophy\_d2[20],entrophy\_d2[1],entrophy\_d2[31],datain\_d2[0],entrophy\_d2[27],entrophy\_d2[23],entrophy\_d2[13],entrophy\_d2[2]

,datain\_d2[5],entrophy\_d2[24],entrophy\_d2[25],entrophy\_d2[6],entrophy\_d2[19],datain\_d2[2],entrophy\_d2[22],entrophy\_d2[3],entrophy\_d2[12],datain\_d2[6],entrophy\_d2[29]

,entrophy\_d2[9],entrophy\_d2[10],entrophy\_d2[5],datain\_d2[1],entrophy\_d2[11],datain\_d2[7],entrophy\_d2[14],entrophy\_d2[28],entrophy\_d2[18]};

26: initialScramble = #0 {datain\_d2[1],entrophy\_d2[23],entrophy\_d2[28],datain\_d2[4],entrophy\_d2[12],entrophy\_d2[9],datain\_d2[6],entrophy\_d2[22],entrophy\_d2[1],entrophy\_d2[8],entrophy\_d2[5],entrophy\_d2[6]

,entrophy\_d2[4],datain\_d2[0],entrophy\_d2[24],entrophy\_d2[18],entrophy\_d2[30],entrophy\_d2[17],entrophy\_d2[16],entrophy\_d2[20],entrophy\_d2[7],datain\_d2[3],entrophy\_d2[15],datain\_d2[7]

,entrophy\_d2[10],entrophy\_d2[26],entrophy\_d2[25],entrophy\_d2[2],datain\_d2[5],entrophy\_d2[3],entrophy\_d2[29],datain\_d2[2]};

27: initialScramble = #0 {entrophy\_d2[3],entrophy\_d2[23],entrophy\_d2[17],datain\_d2[5],entrophy\_d2[30],entrophy\_d2[29],entrophy\_d2[7],entrophy\_d2[2],entrophy\_d2[24],entrophy\_d2[18],entrophy\_d2[28],entrophy\_d2[11],entrophy\_d2[20]

,entrophy\_d2[12],datain\_d2[1],entrophy\_d2[5],entrophy\_d2[22],entrophy\_d2[25],datain\_d2[0],entrophy\_d2[21],entrophy\_d2[13],datain\_d2[4],entrophy\_d2[8],datain\_d2[6]

,entrophy\_d2[15],datain\_d2[7],entrophy\_d2[16],datain\_d2[3],entrophy\_d2[26],entrophy\_d2[10],entrophy\_d2[14],datain\_d2[2]};

28: initialScramble = #0 {entrophy\_d2[23],datain\_d2[4],entrophy\_d2[18],datain\_d2[7],entrophy\_d2[12],datain\_d2[3],entrophy\_d2[8],entrophy\_d2[19],entrophy\_d2[4],entrophy\_d2[14],entrophy\_d2[21],entrophy\_d2[10]

,entrophy\_d2[15],entrophy\_d2[24],datain\_d2[0],entrophy\_d2[22],entrophy\_d2[7],entrophy\_d2[11],entrophy\_d2[17],entrophy\_d2[3],entrophy\_d2[16],datain\_d2[1],entrophy\_d2[13],entrophy\_d2[27]

,entrophy\_d2[6],entrophy\_d2[25],datain\_d2[6],entrophy\_d2[2],datain\_d2[2],datain\_d2[5],entrophy\_d2[20],entrophy\_d2[9]};

29: initialScramble = #0 {entrophy\_d2[23],entrophy\_d2[19],entrophy\_d2[2],entrophy\_d2[0],entrophy\_d2[18],entrophy\_d2[5],entrophy\_d2[1],entrophy\_d2[22],entrophy\_d2[25],datain\_d2[0],datain\_d2[3],entrophy\_d2[29]

,entrophy\_d2[15],entrophy\_d2[11],entrophy\_d2[7],datain\_d2[5],entrophy\_d2[9],entrophy\_d2[28],entrophy\_d2[17],datain\_d2[7],datain\_d2[2],datain\_d2[4],entrophy\_d2[12]

,entrophy\_d2[16],entrophy\_d2[24],entrophy\_d2[21],entrophy\_d2[8],entrophy\_d2[31],datain\_d2[1],entrophy\_d2[26],datain\_d2[6],entrophy\_d2[4]};

30: initialScramble = #0 {entrophy\_d2[29],entrophy\_d2[31],entrophy\_d2[13],entrophy\_d2[23],entrophy\_d2[14],datain\_d2[7],entrophy\_d2[11],datain\_d2[6],datain\_d2[5],entrophy\_d2[4],datain\_d2[3]

,entrophy\_d2[3],datain\_d2[0],entrophy\_d2[26],entrophy\_d2[10],entrophy\_d2[17],entrophy\_d2[1],entrophy\_d2[5],datain\_d2[2],entrophy\_d2[18],entrophy\_d2[16],entrophy\_d2[12],entrophy\_d2[25]

,datain\_d2[1],entrophy\_d2[0],datain\_d2[4],entrophy\_d2[8],entrophy\_d2[15],entrophy\_d2[24],entrophy\_d2[27],entrophy\_d2[30],entrophy\_d2[21]};

31: initialScramble = #0 {entrophy\_d2[9],entrophy\_d2[2],entrophy\_d2[28],entrophy\_d2[16],entrophy\_d2[29],datain\_d2[4],datain\_d2[0],entrophy\_d2[21],entrophy\_d2[20],datain\_d2[1],datain\_d2[3]

,entrophy\_d2[24],entrophy\_d2[12],entrophy\_d2[18],entrophy\_d2[13],entrophy\_d2[6],datain\_d2[6],entrophy\_d2[8],datain\_d2[5],entrophy\_d2[30],entrophy\_d2[19],entrophy\_d2[22],entrophy\_d2[26]

,entrophy\_d2[0],datain\_d2[2],datain\_d2[7],entrophy\_d2[31],entrophy\_d2[4],entrophy\_d2[15],entrophy\_d2[7],entrophy\_d2[3],entrophy\_d2[27]};

default: initialScramble = #0 0;

endcase

case (sel2\_d1)

0: dataScramble = #0 {P3\_d2[49],P14\_d2[48],P1\_d2[76],P15\_d2[96],P12\_d2[20],P6\_d2[188],P2\_d2[7],P7\_d2[87],P9\_d2[89]

,P4\_d2[84],P0\_d2[240],P8\_d2[7],P5\_d2[110],P11\_d2[19],P13\_d2[73],P10\_d2[2]};

1: dataScramble = #0 {P8\_d2[41],P9\_d2[79],P2\_d2[30],P10\_d2[18],P12\_d2[61],P3\_d2[14],P11\_d2[42],P6\_d2[113],P13\_d2[171]

,P0\_d2[177],P5\_d2[279],P15\_d2[72],P14\_d2[54],P1\_d2[145],P7\_d2[115],P4\_d2[65]};

2: dataScramble = #0 {P6\_d2[431],P4\_d2[59],P2\_d2[39],P5\_d2[202],P8\_d2[5],P0\_d2[36],P9\_d2[115],P7\_d2[85],P3\_d2[7]

,P12\_d2[90],P10\_d2[28],P13\_d2[7],P11\_d2[13],P1\_d2[10],P15\_d2[47],P14\_d2[53]};

3: dataScramble = #0 {P8\_d2[19],P4\_d2[12],P9\_d2[85],P0\_d2[153],P1\_d2[26],P12\_d2[128],P5\_d2[54],P6\_d2[168],P14\_d2[50]

,P3\_d2[35],P7\_d2[191],P15\_d2[39],P2\_d2[23],P11\_d2[18],P10\_d2[36],P13\_d2[114]};

4: dataScramble = #0 {P5\_d2[98],P7\_d2[81],P3\_d2[1],P11\_d2[51],P0\_d2[147],P4\_d2[68],P8\_d2[52],P12\_d2[89],P13\_d2[51]

,P1\_d2[103],P10\_d2[33],P15\_d2[65],P14\_d2[9],P6\_d2[234],P2\_d2[40],P9\_d2[93]};

5: dataScramble = #0 {P6\_d2[10],P14\_d2[3],P1\_d2[162],P0\_d2[285],P9\_d2[50],P12\_d2[22],P2\_d2[38],P10\_d2[39],P3\_d2[19]

,P13\_d2[141],P15\_d2[57],P11\_d2[4],P5\_d2[169],P4\_d2[40],P7\_d2[99],P8\_d2[57]};

6: dataScramble = #0 {P2\_d2[10],P11\_d2[10],P4\_d2[62],P13\_d2[40],P9\_d2[33],P15\_d2[77],P3\_d2[57],P0\_d2[403],P5\_d2[62]

,P7\_d2[201],P10\_d2[43],P14\_d2[46],P8\_d2[47],P6\_d2[310],P12\_d2[13],P1\_d2[117]};

7: dataScramble = #0 {P7\_d2[210],P6\_d2[369],P10\_d2[30],P1\_d2[36],P0\_d2[448],P13\_d2[140],P12\_d2[63],P3\_d2[59]

,P5\_d2[277],P9\_d2[0],P15\_d2[38],P14\_d2[22],P11\_d2[47],P4\_d2[39],P2\_d2[9],P8\_d2[9]};

8: dataScramble = #0 {P11\_d2[25],P3\_d2[30],P15\_d2[48],P14\_d2[51],P8\_d2[11],P7\_d2[26],P1\_d2[54],P2\_d2[19],P6\_d2[291]

,P12\_d2[47],P0\_d2[47],P10\_d2[40],P5\_d2[26],P4\_d2[71],P9\_d2[78],P13\_d2[147]};

9: dataScramble = #0 {P11\_d2[45],P8\_d2[8],P14\_d2[33],P1\_d2[88],P13\_d2[188],P15\_d2[33],P7\_d2[128],P5\_d2[70],P10\_d2[37]

,P3\_d2[25],P9\_d2[58],P4\_d2[45],P12\_d2[107],P6\_d2[462],P2\_d2[0],P0\_d2[316]};

10: dataScramble = #0 {P1\_d2[95],P8\_d2[32],P15\_d2[26],P9\_d2[27],P14\_d2[45],P5\_d2[209],P2\_d2[37],P13\_d2[83],P6\_d2[306]

,P0\_d2[263],P11\_d2[48],P4\_d2[36],P3\_d2[0],P12\_d2[142],P7\_d2[142],P10\_d2[3]};

11: dataScramble = #0 {P3\_d2[16],P13\_d2[12],P15\_d2[97],P11\_d2[6],P12\_d2[27],P6\_d2[271],P10\_d2[1],P9\_d2[86],P2\_d2[8]

,P1\_d2[122],P7\_d2[174],P5\_d2[215],P0\_d2[88],P4\_d2[20],P8\_d2[49],P14\_d2[52]};

12: dataScramble = #0 {P2\_d2[14],P12\_d2[39],P4\_d2[32],P8\_d2[18],P6\_d2[384],P11\_d2[37],P13\_d2[104],P10\_d2[11]

,P7\_d2[3],P5\_d2[84],P14\_d2[36],P9\_d2[35],P0\_d2[268],P15\_d2[17],P3\_d2[18],P1\_d2[13]};

13: dataScramble = #0 {P10\_d2[14],P14\_d2[5],P7\_d2[184],P13\_d2[136],P2\_d2[41],P9\_d2[66],P0\_d2[391],P8\_d2[21],P4\_d2[23]

,P1\_d2[125],P3\_d2[40],P11\_d2[0],P12\_d2[56],P5\_d2[7],P6\_d2[301],P15\_d2[108]};

14: dataScramble = #0 {P14\_d2[2],P5\_d2[25],P2\_d2[20],P15\_d2[29],P0\_d2[141],P13\_d2[65],P8\_d2[30],P6\_d2[501],P12\_d2[74]

,P10\_d2[26],P3\_d2[5],P9\_d2[29],P1\_d2[96],P4\_d2[69],P11\_d2[24],P7\_d2[108]};

15: dataScramble = #0 {P2\_d2[32],P14\_d2[26],P5\_d2[268],P12\_d2[124],P8\_d2[27],P0\_d2[170],P6\_d2[305],P11\_d2[11]

,P7\_d2[45],P3\_d2[9],P4\_d2[7],P10\_d2[47],P9\_d2[126],P15\_d2[41],P1\_d2[132],P13\_d2[125]};

16: dataScramble = #0 {P12\_d2[38],P3\_d2[63],P5\_d2[287],P11\_d2[26],P7\_d2[199],P10\_d2[9],P14\_d2[34],P0\_d2[151]

,P1\_d2[91],P2\_d2[31],P8\_d2[53],P15\_d2[8],P13\_d2[25],P4\_d2[72],P6\_d2[160],P9\_d2[21]};

17: dataScramble = #0 {P15\_d2[25],P7\_d2[195],P5\_d2[146],P12\_d2[96],P0\_d2[233],P1\_d2[74],P9\_d2[1],P11\_d2[49],P4\_d2[74]

,P8\_d2[44],P2\_d2[29],P3\_d2[22],P13\_d2[14],P6\_d2[408],P10\_d2[24],P14\_d2[18]};

18: dataScramble = #0 {P7\_d2[1],P10\_d2[5],P4\_d2[82],P8\_d2[33],P3\_d2[13],P13\_d2[112],P11\_d2[32],P2\_d2[18],P15\_d2[103]

,P14\_d2[19],P9\_d2[41],P6\_d2[466],P12\_d2[42],P0\_d2[79],P1\_d2[39],P5\_d2[186]};

19: dataScramble = #0 {P7\_d2[59],P4\_d2[30],P3\_d2[50],P8\_d2[61],P14\_d2[16],P2\_d2[26],P0\_d2[136],P5\_d2[185],P12\_d2[60]

,P6\_d2[385],P13\_d2[26],P10\_d2[48],P1\_d2[62],P11\_d2[34],P15\_d2[37],P9\_d2[94]};

20: dataScramble = #0 {P10\_d2[46],P0\_d2[211],P3\_d2[34],P14\_d2[38],P8\_d2[42],P4\_d2[70],P15\_d2[113],P9\_d2[76],P1\_d2[2]

,P2\_d2[35],P12\_d2[72],P5\_d2[12],P13\_d2[170],P11\_d2[40],P6\_d2[488],P7\_d2[54]};

21: dataScramble = #0 {P2\_d2[21],P1\_d2[38],P4\_d2[18],P3\_d2[56],P7\_d2[147],P11\_d2[21],P0\_d2[102],P12\_d2[30],P9\_d2[17]

,P15\_d2[15],P14\_d2[8],P13\_d2[28],P5\_d2[6],P8\_d2[13],P6\_d2[93],P10\_d2[17]};

22: dataScramble = #0 {P14\_d2[29],P3\_d2[15],P10\_d2[15],P8\_d2[16],P2\_d2[5],P5\_d2[238],P7\_d2[34],P0\_d2[332],P4\_d2[58]

,P12\_d2[132],P13\_d2[129],P1\_d2[79],P9\_d2[45],P11\_d2[39],P15\_d2[92],P6\_d2[297]};

23: dataScramble = #0 {P10\_d2[19],P8\_d2[14],P5\_d2[223],P2\_d2[42],P14\_d2[59],P13\_d2[180],P4\_d2[55],P6\_d2[126]

,P15\_d2[66],P12\_d2[143],P7\_d2[161],P1\_d2[172],P9\_d2[97],P11\_d2[30],P0\_d2[86],P3\_d2[53]};

24: dataScramble = #0 {P7\_d2[67],P12\_d2[83],P11\_d2[36],P3\_d2[60],P0\_d2[232],P2\_d2[13],P15\_d2[46],P9\_d2[54],P10\_d2[25]

,P4\_d2[27],P13\_d2[159],P5\_d2[286],P1\_d2[99],P14\_d2[63],P6\_d2[76],P8\_d2[48]};

25: dataScramble = #0 {P14\_d2[20],P8\_d2[56],P5\_d2[196],P11\_d2[46],P6\_d2[38],P9\_d2[114],P12\_d2[144],P7\_d2[182]

,P15\_d2[42],P0\_d2[150],P2\_d2[15],P3\_d2[38],P4\_d2[11],P13\_d2[107],P10\_d2[8],P1\_d2[129]};

26: dataScramble = #0 {P14\_d2[62],P6\_d2[419],P13\_d2[127],P1\_d2[28],P10\_d2[13],P4\_d2[46],P9\_d2[88],P3\_d2[68],P7\_d2[32]

,P8\_d2[65],P2\_d2[28],P5\_d2[187],P15\_d2[23],P12\_d2[80],P0\_d2[69],P11\_d2[20]};

27: dataScramble = #0 {P4\_d2[83],P0\_d2[286],P9\_d2[59],P5\_d2[38],P6\_d2[191],P3\_d2[47],P13\_d2[92],P11\_d2[5],P14\_d2[56]

,P15\_d2[94],P7\_d2[62],P1\_d2[27],P12\_d2[123],P8\_d2[22],P2\_d2[27],P10\_d2[6]};

28: dataScramble = #0 {P6\_d2[206],P2\_d2[12],P7\_d2[154],P15\_d2[14],P11\_d2[41],P13\_d2[193],P3\_d2[39],P14\_d2[6]

,P9\_d2[92],P10\_d2[35],P12\_d2[141],P0\_d2[185],P5\_d2[118],P1\_d2[17],P8\_d2[50],P4\_d2[1]};

29: dataScramble = #0 {P13\_d2[13],P6\_d2[99],P9\_d2[18],P14\_d2[42],P12\_d2[6],P15\_d2[88],P10\_d2[20],P1\_d2[15],P11\_d2[23]

,P5\_d2[68],P0\_d2[241],P7\_d2[205],P4\_d2[50],P8\_d2[54],P2\_d2[36],P3\_d2[21]};

30: dataScramble = #0 {P15\_d2[7],P13\_d2[45],P7\_d2[70],P5\_d2[282],P9\_d2[25],P10\_d2[34],P6\_d2[11],P3\_d2[48],P11\_d2[3]

,P2\_d2[34],P1\_d2[107],P14\_d2[39],P8\_d2[3],P4\_d2[21],P12\_d2[100],P0\_d2[276]};

31: dataScramble = #0 {P15\_d2[69],P2\_d2[17],P5\_d2[233],P4\_d2[57],P7\_d2[175],P11\_d2[31],P14\_d2[25],P8\_d2[17],P3\_d2[4]

,P0\_d2[70],P12\_d2[9],P1\_d2[130],P13\_d2[43],P9\_d2[65],P10\_d2[42],P6\_d2[493]};

default: dataScramble = #0 0;

endcase

end

end

endmodule