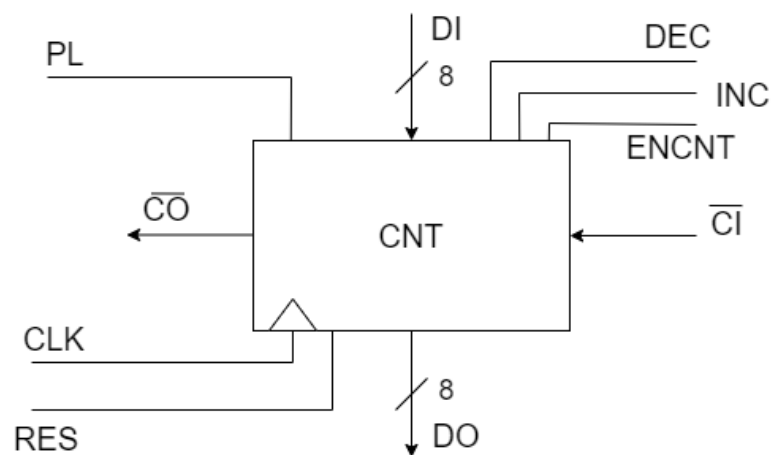


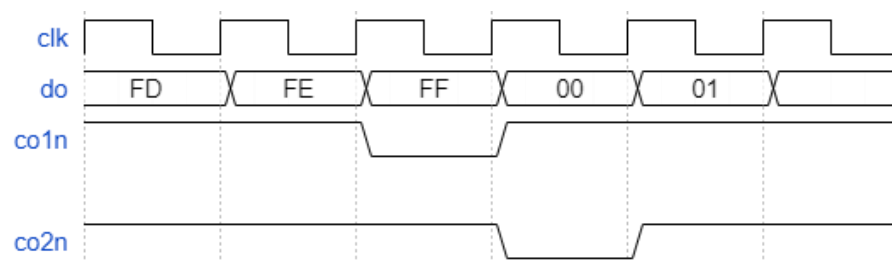
## Am2940

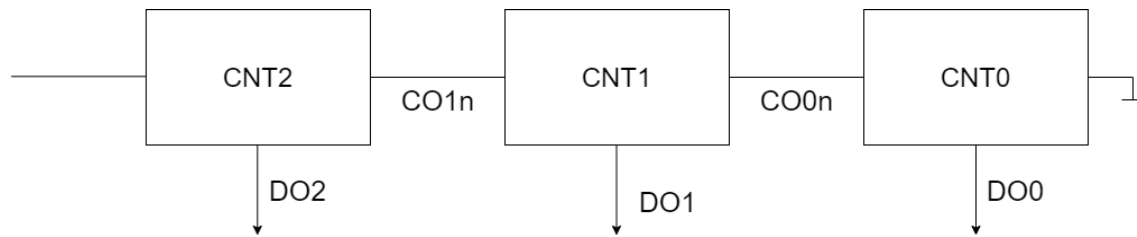
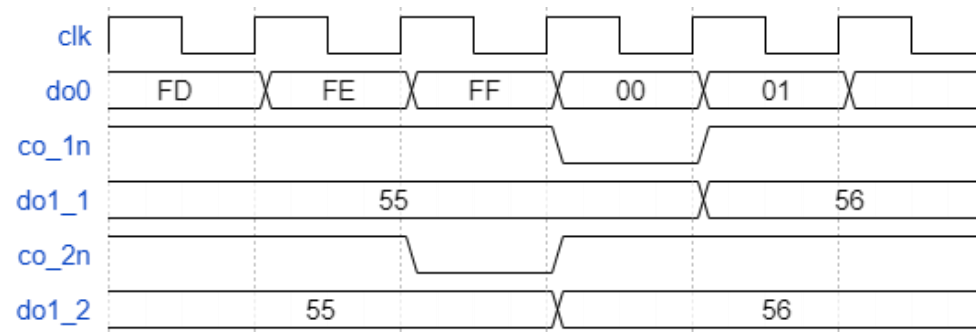
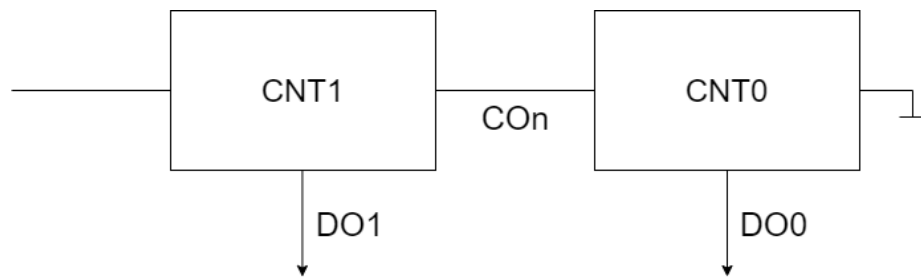
### Numărătoarele

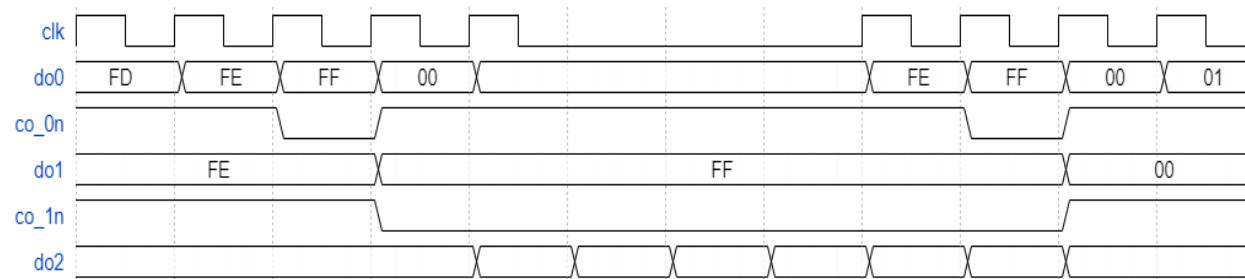
Porturi:



Generare CO<sub>n</sub>:







### Address Reg

di(8), do(8)

clk, **plar**

### Word Reg

di(8), do(8)

clk, **plwr**

### Address Mux

di0(8), di1(8), do(8)

**sela**

sela = 0 -> do = di0 datain

sela = 1 -> do = di1 addreg

### Word Mux

di0(8), di1(8), do(8)

**selw**

selw = 0 -> do = di0 datain

selw = 1 -> do = di1 wordreg

Ctrl Reg

di(3), do(3)

clk, **plcr**

Data Mux

di0(8), di1(8), di2(3), do(8)

**seld**(2)

seld = 2'b00 out = di0 add cnt

seld = 2'b01 out = di1 word cnt

seld = 2'b1x out = {5'b11111,di2} di2 <- cr

```
module mux1_3(di0, di1, di2, do, sel);
    input [7:0] di0, di1;
    input [2:0] di2;
    output reg [7:0] do;
    input [1:0] sel;
    always @(di0 or di1 or di2 or sel)
        casex(sel)
            2'b00: do = di0;
            2'b01: do = di1;
            2'b1x: do = {5'b11111,di2};
        endcase
endmodule
```

### Address Cnt

clk, **plac**, **ena**, **inca**, **deca**, cina

di(8)

cona

do(8)

### Word Cnt

clk, **resw**, **plwc**, **enw**, **incw**, **decw**, cinw

di(8)

conw

do(8)

### Data Bus

**oedata**

### Done Gen

cr[1:0], cinw, dowc, dowlr, doac

```
module done_gen(dowc, dowlr, doac, cinw, mode, done);  
    input [7:0] dowc, dowlr, doac;  
    input [1:0] mode;  
    input cinw;  
    output reg done;  
  
    always @(dowc or dowlr or doac or cinw or mode)  
        casex({mode,cinw})  
            3'b00_0: done = (dowc === 8'b1);
```

```
3'b00_1: done = ~(/dowc);  
3'b01_0: done = (dowc + 1 === dowr);  
3'b01_1: done = (dowc === dowr);  
3'b10_x: done = (dowc === doac);  
3'b11_x: done = 1'b0;
```

```
endcase
```

```
endmodule
```

I[2:0]	CR[2:0]	plar	plwr	sela	selw	plcr	seld	plac	ena	inca	deca	resw	plwc	enw	incw	decw	oedata
000	xxx	0	0	x	x	1	xx	0	0	0	0	0	0	0	0	0	0
001	xxx	0	0	x	x	0	1x	0	0	0	0	0	0	0	0	0	1
010	xxx	0	0	x	x	0	01	0	0	0	0	0	0	0	0	0	1
011	xxx	0	0	x	x	0	00	0	0	0	0	0	0	0	0	0	1
100	xx0,x11	0	0	1	1	0	xx	1	0	0	0	0	1	0	0	0	0
	x01	0	0	1	x	0	xx	1	0	0	0	1	0	0	0	0	0
101	xxx	1	0	0	x	0	xx	1	0	0	0	0	0	0	0	0	0
110	xx0,x11	0	1	x	0	0	xx	0	0	0	0	0	1	0	0	0	0
	x01	0	1	x	x	0	xx	0	0	0	0	1	0	0	0	0	0
111	000	0	0	x	x	0	xx	0	1	1	0	0	0	1	0	1	0
	0x1	0	0	x	x	0	xx	0	1	1	0	0	0	1	1	0	0
	010	0	0	x	x	0	xx	0	1	1	0	0	0	0	0	0	0
	100	0	0	x	x	0	xx	0	1	0	1	0	0	1	0	1	0
	1x1	0	0	x	x	0	xx	0	1	0	1	0	0	1	1	0	0
	110	0	0	x	x	0	xx	0	1	0	1	0	0	0	0	0	0