

```
timescale 1ns / 1ps
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
// Company:
// Engineer:
//
// Create Date: 02/21/2018 02:14:51 PM
// Design Name:
// Module Name: CountUDL8
// Project Name:
// Target Devices:
// Tool Versions:
// Description:
//
// Dependencies:
//
// Revision:
// Revision 0.01 - File Created
// Additional Comments:
//
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
```

```
module CountUDL8(
    input clk,
    input up,
    input dw,
    input ld,
    input [7:0] Din,
    output [7:0] Q,
    output UTC,
    output DTC
);

    wire[1:0] utc, dtc;

    CountUD4L counter0(clk, up, dw, ld, Din[3:0], Q[3:0], utc[0], dtc[0]);
    CountUD4L counter1(clk, up&utc[0], dw&dtc[0], ld, Din[7:4], Q[7:4], utc[1],
dtc[1]);

    assign UTC = &utc;
    assign DTC = &dtc;

endmodule
```