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MODULE decoder

//mb u135c.abl
//Tom Stoll, 4/10/00

//Intended for IOC555 Rev. 1.2.1 (D) or later
//Target Reference Designator: U135

//Revisions:
//Rev. A: Original Version                      4/10/00
//Rev. B: Changed name for new convention       6/20/00
//Rev. C: Added WE0 input (requires jumper      10/19/00
//              wire for Rev. D cards)
//Rev. D: Added AO signals (Rev. G cards)       11/30/01

//Test points require MPC555 OR3 (Options Register 3) set to XXXXX800 (CNST)

Declarations

//INPUTS

        A12,A13,A14                             pin 40,41,42;
        A22,A23,A28,A29,A30                     pin 8,9,10,11,12;
        CS0,CS2,CS3                             pin 1,2,3;
        DATA                                    pin 13;
        WE0                                     pin 15;
        RnW                                     pin 5;

//OUTPUTS

//C     TP2, TP3, TP4, TP0, TP1                 pin 23,24,25,30,31      istype 'reg,buffer';
        TP0, TP1, TP2, TP3, TP4                 pin 18,19,20,21,22      istype 'reg,buffer';
        nDAC1, nDAC2, nDAC3                     pin 23,24,25            istype 'com';
        DAC A0                                  pin 30                  istype 'com';
        nCS 7247 1, nCS 7247 2, nCS 7247 3      pin 31,32,33            istype 'com';
        nCS 7247 4, nCS 7247 5, nCS 7247 6      pin 34,35,36            istype 'com';
        nWR_7247                                pin 37                  istype 'com';

//INTERNAL NODES

        first,second,third,forth,fifth,sixth            node;
        misc, io cs3, an out                            node;
        ao1,ao2,ao3,ao4,ao5,ao6                         node;

        H,L,X           = 1,0,.X.;
        IO ADDR         = [A22,A23];
        MEM ADDR        = [A12,A13,A14];
        NUMBER          = [A28,A29,A30];


Equations


//NODE EQUATIONS

        first           = NUMBER == [L,L,L];
        second          = NUMBER == [L,L,H];
        third           = NUMBER == [L,H,L];
        forth           = NUMBER == [L,H,H];
        fifth           = NUMBER == [H,L,L];
        sixth           = NUMBER == [H,L,H];

        io_cs3          = (MEM_ADDR == [L,L,L]) & !CS3;

        an_out          = (IO_ADDR == [L,H]) & io_cs3 & !RnW;

        ao1             = an out & first;
        ao2             = an out & second;
        ao3             = an out & third;
        ao4             = an out & forth;
        ao5             = an out & fifth;
        ao6             = an_out & sixth;

//      misc            = (IO ADDR == [H,L]) & !CS3;
        misc            = (IO_ADDR == [H,L]) & !CS3 & !WE0;

//OUTPUT EQUATIONS

        !nCS 7247 1     = ao1;
        !nCS 7247 2     = ao2;
        !nCS 7247 3     = ao3;
        !nCS 7247 4     = ao4;
        !nCS 7247 5     = ao5;
        !nCS_7247_6     = ao6;

        !nWR_7247       = an_out;


        nDAC1           = ao1 !$ ao2;
        nDAC2           = ao3 !$ ao4;
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        nDAC3           = ao5 !$ ao6;

        !DAC_A0         = an_out & A30;


        !TP0.clk        = misc & second;
        !TP1.clk        = misc & third;
        !TP2.clk        = misc & forth;
        !TP3.clk        = misc & fifth;
        !TP4.clk        = misc & sixth;

        TP0             := DATA;
        TP1             := DATA;
        TP2             := DATA;
        TP3             := DATA;
        TP4             := DATA;

END
```