步骤一：重新设置工程属性



双击原工程的蓝色部分，打开Design Property

………..

属性如图所示进行设置

步骤二： 修改ucf及顶层模块接口

将ucf中的时钟引脚约束修改如下：

NET "CLK\_200M\_P" LOC = AC18 | IOSTANDARD = LVDS ;

NET "CLK\_200M\_N" LOC = AD18 | IOSTANDARD = LVDS ;

NET "CLK\_200M\_P" TNM\_NET = TM\_CLK ;

TIMESPEC TS\_CLKIN = PERIOD "TM\_CLK" 5 ns HIGH 50%;

将顶层模块中的clk接口修改为如下：



步骤三：添加时钟转换模块：

新建verilog module，设计时钟转换：

module clk\_2to1(input clk200P,clk200N,rst,output clk);

 IBUFDS sclk(.I(clk200P),

 .IB(clk200N),

 .O(clk));

Endmodule

在top模块中调用该转换模块：

clk\_2to1 c0(CLK\_200M\_P,CLK\_200M\_N,RSTN,clk);

输出clk即为旧实验板上的clk信号

附录：原文ucf设计：

|  |
| --- |
| #Created by Constraints Editor (xc7k325t-ffg676-2l) - 2017/09/03##system clockNET "clk200N" LOC= AD18 | IOSTANDARD = LVDS ;NET "clk200P" LOC= AC18 | IOSTANDARD = LVDS ;##Reset or CRNET "rst\_n" LOC = W13 | IOSTANDARD = LVCMOS18 ;##闃靛垪閿洏NET "btn\_x[0]" LOC = V17 | IOSTANDARD = LVCMOS18 ;NET "btn\_x[1]" LOC = W18 | IOSTANDARD = LVCMOS18 ;NET "btn\_x[2]" LOC = W19 | IOSTANDARD = LVCMOS18 ;NET "btn\_x[3]" LOC = W15 | IOSTANDARD = LVCMOS18 ;#NET "btn\_x[4]" LOC = W16 | IOSTANDARD = LVCMOS18 ;NET "btn\_y[0]" LOC = V18 | IOSTANDARD = LVCMOS18 ;NET "btn\_y[1]" LOC = V19 | IOSTANDARD = LVCMOS18 ;NET "btn\_y[2]" LOC = V14 | IOSTANDARD = LVCMOS18 ;NET "btn\_y[3]" LOC = W14 | IOSTANDARD = LVCMOS18 ;NET "btn\_y[4]" LOC = V16 | IOSTANDARD = LVCMOS18 ;##涓夎壊鎸囩ず鐏細Tri LEDNET "tri\_led0\_b\_n" LOC = V22 | IOSTANDARD = LVCMOS33 ;NET "tri\_led0\_g\_n" LOC = U22 | IOSTANDARD = LVCMOS33 ;NET "tri\_led0\_r\_n" LOC = U21 | IOSTANDARD = LVCMOS33 ;#NET "tri\_led1\_b\_n" LOC = V23 | IOSTANDARD = LVCMOS33 ;#NET "tri\_led1\_g\_n" LOC = U25 | IOSTANDARD = LVCMOS33 ;#NET "tri\_led1\_r\_n" LOC = U24 | IOSTANDARD = LVCMOS33 ;##涓冩鐮佷覆琛屾帴鍙NET "seg\_clk" LOC = M24 | IOSTANDARD = LVCMOS33 ;NET "seg\_pen" LOC = R18 | IOSTANDARD = LVCMOS33 ;NET "seg\_do" LOC = L24 | IOSTANDARD = LVCMOS33 ;##LEDNET "led\_clk" LOC = N26 | IOSTANDARD = LVCMOS33 ;NET "led\_pen" LOC = N24 | IOSTANDARD = LVCMOS33 ;NET "led\_do" LOC = M26 | IOSTANDARD = LVCMOS33 ;##switchNET "switch[0]" LOC = AA10 | IOSTANDARD = LVCMOS15 ;NET "switch[1]" LOC = AB10 | IOSTANDARD = LVCMOS15 ;NET "switch[2]" LOC = AA13 | IOSTANDARD = LVCMOS15 ;NET "switch[3]" LOC = AA12 | IOSTANDARD = LVCMOS15 ;NET "switch[4]" LOC = Y13 | IOSTANDARD = LVCMOS15 ;NET "switch[5]" LOC = Y12 | IOSTANDARD = LVCMOS15 ;NET "switch[6]" LOC = AD11 | IOSTANDARD = LVCMOS15 ;NET "switch[7]" LOC = AD10 | IOSTANDARD = LVCMOS15 ;NET "switch[8]" LOC = AE10 | IOSTANDARD = LVCMOS15 ;NET "switch[9]" LOC = AE12 | IOSTANDARD = LVCMOS15 ;NET "switch[10]" LOC = AF12 | IOSTANDARD = LVCMOS15 ;NET "switch[11]" LOC = AE8 | IOSTANDARD = LVCMOS15 ;NET "switch[12]" LOC = AF8 | IOSTANDARD = LVCMOS15 ;NET "switch[13]" LOC = AE13 | IOSTANDARD = LVCMOS15 ;NET "switch[14]" LOC = AF13 | IOSTANDARD = LVCMOS15 ;NET "switch[15]" LOC = AF10 | IOSTANDARD = LVCMOS15 ;##VGANET "vga\_blue[0]" LOC = T20 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_blue[1]" LOC = R20 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_blue[2]" LOC = T22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_blue[3]" LOC = T23 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_green[0]" LOC = R22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_green[1]" LOC = R23 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_green[2]" LOC = T24 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_green[3]" LOC = T25 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_red[0]" LOC = N21 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_red[1]" LOC = N22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_red[2]" LOC = R21 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_red[3]" LOC = P21 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_h\_sync" LOC = M22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;NET "vga\_v\_sync" LOC = M21 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;## KeyboardNET "keyboard\_clk" LOC = N18 | IOSTANDARD = LVCMOS33 ;NET "keyboard\_dat" LOC = M19 | IOSTANDARD = LVCMOS33 ;## DB9 Uart#NET "uart\_rx" LOC = L25 | IOSTANDARD = LVCMOS33 | SLEW = FAST | PULLUP ;#NET "uart\_tx" LOC = P24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 16 | PULLUP ;## SRAM#NET "sram\_addr[0]" LOC = D20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[1]" LOC = D18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[2]" LOC = E16 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[3]" LOC = E18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[4]" LOC = E17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[5]" LOC = E20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[6]" LOC = F15 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[7]" LOC = F18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[8]" LOC = H19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[9]" LOC = J16 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[10]" LOC = J18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[11]" LOC = J20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[12]" LOC = G19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[13]" LOC = H17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[14]" LOC = F20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[15]" LOC = G17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[16]" LOC = F17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[17]" LOC = F19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[18]" LOC = H18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_addr[19]" LOC = G20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_ce\_n[0]" LOC = E15 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_ce\_n[1]" LOC = G15 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_ce\_n[2]" LOC = K20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[0]" LOC = M16 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[1]" LOC = L19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[2]" LOC = L17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[3]" LOC = K18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[4]" LOC = L18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[5]" LOC = K17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[6]" LOC = K16 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[7]" LOC = M17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[8]" LOC = H26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[9]" LOC = H23 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[10]" LOC = H21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[11]" LOC = J26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[12]" LOC = L20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[13]" LOC = J19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[14]" LOC = J21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[15]" LOC = K21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[16]" LOC = B26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[17]" LOC = C22 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[18]" LOC = A24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[19]" LOC = A23 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[20]" LOC = E22 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[21]" LOC = E23 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[22]" LOC = C24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[23]" LOC = D23 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[24]" LOC = B20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[25]" LOC = A20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[26]" LOC = C21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[27]" LOC = B21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[28]" LOC = A22 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[29]" LOC = B22 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[30]" LOC = D21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[31]" LOC = E21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[32]" LOC = H24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[33]" LOC = E26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[34]" LOC = G25 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[35]" LOC = F24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[36]" LOC = F25 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[37]" LOC = G24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[38]" LOC = G21 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[39]" LOC = G26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[40]" LOC = F22 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[41]" LOC = G22 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[42]" LOC = C26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[43]" LOC = D24 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[44]" LOC = E25 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[45]" LOC = F23 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[46]" LOC = D25 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_data[47]" LOC = D26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_oe\_n[0]" LOC = D19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_oe\_n[1]" LOC = U19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_oe\_n[2]" LOC = P16 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_we\_n[0]" LOC = J15 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_we\_n[1]" LOC = T19 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_we\_n[2]" LOC = P23 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_ub\_n[0]" LOC = R26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_ub\_n[1]" LOC = P20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_ub\_n[2]" LOC = P18 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_lb\_n[0]" LOC = K26 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_lb\_n[1]" LOC = M20 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;#NET "sram\_lb\_n[2]" LOC = R17 | IOSTANDARD = LVCMOS33 | SLEW = FAST | DRIVE = 4 ;## BPI Flash#NET "flash\_addr[0]" LOC = C12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[1]" LOC = J11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[2]" LOC = H13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[3]" LOC = H12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[4]" LOC = J13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[5]" LOC = H11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[6]" LOC = J10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[7]" LOC = J8 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[8]" LOC = F9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[9]" LOC = F8 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[10]" LOC = E10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[11]" LOC = F10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[12]" LOC = D9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[13]" LOC = D8 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[14]" LOC = G14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[15]" LOC = H14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[16]" LOC = B9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[17]" LOC = G11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[18]" LOC = H9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[19]" LOC = G12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[20]" LOC = F12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[21]" LOC = H8 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[22]" LOC = A8 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[23]" LOC = C9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[24]" LOC = D10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_addr[25]" LOC = A9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_ce\_n[0]" LOC = D11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_ce\_n[1]" LOC = F14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[0]" LOC = D14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[1]" LOC = D13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[2]" LOC = E13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[3]" LOC = E12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[4]" LOC = C14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[5]" LOC = C13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[6]" LOC = B12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[7]" LOC = B11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[8]" LOC = B14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[9]" LOC = A14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[10]" LOC = B10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[11]" LOC = A10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[12]" LOC = B15 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[13]" LOC = A15 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[14]" LOC = A13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[15]" LOC = A12 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[16]" LOC = J14 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[17]" LOC = J25 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[18]" LOC = C18 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[19]" LOC = J23 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[20]" LOC = K23 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[21]" LOC = B17 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[22]" LOC = L22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[23]" LOC = D15 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[24]" LOC = H22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[25]" LOC = K15 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[26]" LOC = J24 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[27]" LOC = K22 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[28]" LOC = C17 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[29]" LOC = D16 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[30]" LOC = A17 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_data[31]" LOC = L23 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_oe\_n" LOC = F13 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_rst\_n" LOC = G9 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_ready[0]" LOC = C11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_ready[1]" LOC = E11 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;#NET "flash\_we\_n" LOC = G10 | IOSTANDARD = LVCMOS33 | SLEW = FAST ;## SD Card SPI mode#NET "sd\_cs\_n" LOC = Y20 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_sclk" LOC = AF23 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_mosi" LOC = AE25 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_miso" LOC = AD25 | IOSTANDARD = LVCMOS33 ;## SD Card SD mode#NET "sd\_cd" LOC = AE26 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_sck" LOC = AF23 | IOSTANDARD = LVCMOS33;#NET "sd\_cmd" LOC = AD25 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_dat0" LOC = AE25 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_dat1" LOC = AE22 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_dat2" LOC = AF22 | IOSTANDARD = LVCMOS33 | PULLUP ;#NET "sd\_dat3" LOC = Y20 | IOSTANDARD = LVCMOS33 | PULLUP ;##Pmod interface#NET "pmodsd\_cs\_n" LOC = "C16" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 0#NET "pmodsd\_mosi" LOC = "C19" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 1#NET "pmodsd\_miso" LOC = "A18" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 2#NET "pmodsd\_sclk" LOC = "H16" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 3#NET "JE\_I[1]" LOC = "B16" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 4#NET "JE\_I[2]" LOC = "B19" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 5#NET "JE\_I[3]" LOC = "A19" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 6#NET "JE\_I[4]" LOC = "G16" | IOSTANDARD = "LVCMOS33"; #Bank = 2, Pin no 7##Arduino-Sword-002-Basic IONET "buzzer" LOC = AF25 | IOSTANDARD = LVCMOS33 ;#NET "segment[0]" LOC = AB22 | IOSTANDARD = LVCMOS33 ;#a#NET "segment[1]" LOC = AD24 | IOSTANDARD = LVCMOS33 ;#b#NET "segment[2]" LOC = AD23 | IOSTANDARD = LVCMOS33 ;#NET "segment[3]" LOC = Y21 | IOSTANDARD = LVCMOS33 ;#NET "segment[4]" LOC = W20 | IOSTANDARD = LVCMOS33 ;#NET "segment[5]" LOC = AC24 | IOSTANDARD = LVCMOS33 ;#NET "segment[6]" LOC = AC23 | IOSTANDARD = LVCMOS33 ;#g#NET "segment[7]" LOC = AA22 | IOSTANDARD = LVCMOS33 ;#point#NET "an[0]" LOC = AD21 | IOSTANDARD = LVCMOS33 ;#NET "an[1]" LOC = AC21 | IOSTANDARD = LVCMOS33 ;#NET "an[2]" LOC = AB21 | IOSTANDARD = LVCMOS33 ;#NET "an[3]" LOC = AC22 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[0]" LOC = AF24 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[1]" LOC = AE21 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[2]" LOC = Y22 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[3]" LOC = Y23 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[4]" LOC = AA23 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[5]" LOC = Y25 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[6]" LOC = AB26 | IOSTANDARD = LVCMOS33 ;#NET "a\_led[7]" LOC = W23 | IOSTANDARD = LVCMOS33 ; |

复制以上代码至新的ucf，所需要的引脚已经取消注释。对照下文说明进行改名

具体解释：

NET "clk200N" LOC= AD18 | IOSTANDARD = LVDS ;

NET "clk200P" LOC= AC18 | IOSTANDARD = LVDS ;

200HMZ时钟引脚，接入新模块

NET "rst\_n" LOC = W13 | IOSTANDARD = LVCMOS18 ;

Reset信号，对应板子FPGA RST按钮（阵列键盘右边两个单独的键下面那个黄色的）

NET "btn\_x[0]" LOC = V17 | IOSTANDARD = LVCMOS18 ;

NET "btn\_x[1]" LOC = W18 | IOSTANDARD = LVCMOS18 ;

NET "btn\_x[2]" LOC = W19 | IOSTANDARD = LVCMOS18 ;

NET "btn\_x[3]" LOC = W15 | IOSTANDARD = LVCMOS18 ;

#NET "btn\_x[4]" LOC = W16 | IOSTANDARD = LVCMOS18 ;

NET "btn\_y[0]" LOC = V18 | IOSTANDARD = LVCMOS18 ;

NET "btn\_y[1]" LOC = V19 | IOSTANDARD = LVCMOS18 ;

NET "btn\_y[2]" LOC = V14 | IOSTANDARD = LVCMOS18 ;

NET "btn\_y[3]" LOC = W14 | IOSTANDARD = LVCMOS18 ;

NET "btn\_y[4]" LOC = V16 | IOSTANDARD = LVCMOS18 ;

阵列键盘，5X5分别代表25个按键

NET "tri\_led0\_b\_n" LOC = V22 | IOSTANDARD = LVCMOS33 ;

NET "tri\_led0\_g\_n" LOC = U22 | IOSTANDARD = LVCMOS33 ;

NET "tri\_led0\_r\_n" LOC = U21 | IOSTANDARD = LVCMOS33 ;

#NET "tri\_led1\_b\_n" LOC = V23 | IOSTANDARD = LVCMOS33 ;

#NET "tri\_led1\_g\_n" LOC = U25 | IOSTANDARD = LVCMOS33 ;

#NET "tri\_led1\_r\_n" LOC = U24 | IOSTANDARD = LVCMOS33 ;

三色灯，对应SW15的开关，只需要打开前三个

NET "seg\_clk" LOC = M24 | IOSTANDARD = LVCMOS33 ;

NET "seg\_pen" LOC = R18 | IOSTANDARD = LVCMOS33 ;

NET "seg\_do" LOC = L24 | IOSTANDARD = LVCMOS33 ;

##LED

NET "led\_clk" LOC = N26 | IOSTANDARD = LVCMOS33 ;

NET "led\_pen" LOC = N24 | IOSTANDARD = LVCMOS33 ;

NET "led\_do" LOC = M26 | IOSTANDARD = LVCMOS33 ;

LED和GPIO的输出引脚，和原文件的对应关系为

|  |  |
| --- | --- |
| 原文件 | 新文件 |
| LEDCLK | led\_clk |
| LEDEN | led\_pen |
| LEDDT | led\_do |
| LEDCLR | 删去 |
| SEGCLK | seg\_clk |
| SEGDT | seg\_do |
| SEGEN | seg\_pen |
| SEGCLR | 删去 |

其他引脚包括PS2引脚，VGA引脚等，可从名字判断，如果加入后报错先注释掉该引脚。