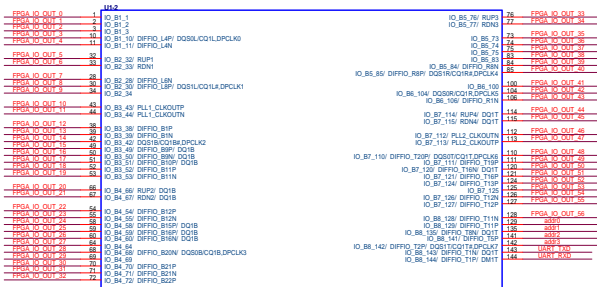
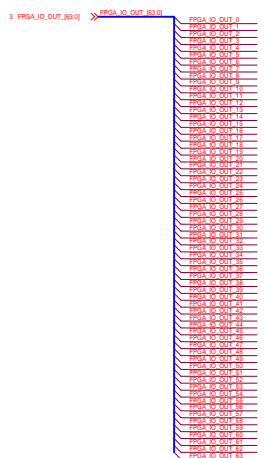
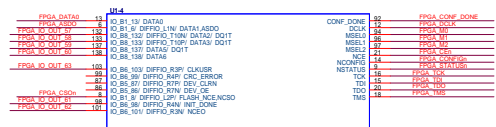
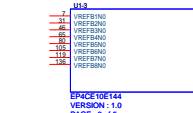
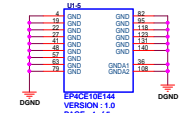
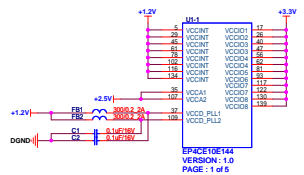


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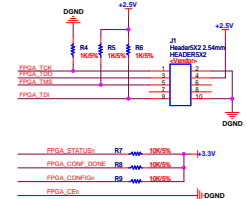
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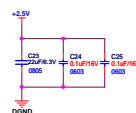
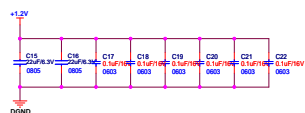
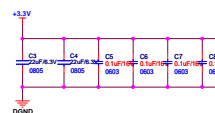
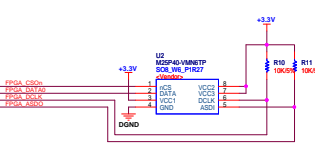
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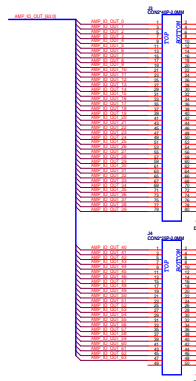
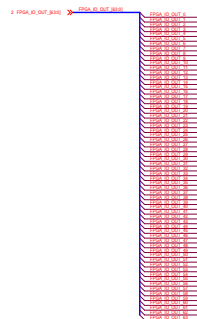
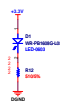
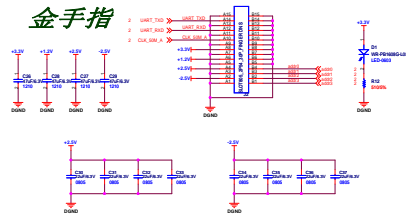
FPGA JTAG



2x5 排针



金手指



2.0间距的排母，焊接在板子侧面，夹住板子两面，板厚1.6，正好兼顾金手指由25x2 和 40x2 两个排针组成

这两个螺丝孔，用于通过螺柱，把立起的10块io板连接固定起来，注意摆放位置



$U_0 = 3.3v * R33 / (R33 + R36) = 1.65V$
 $U_{offset} = -U_0 / (R23 / R24) = -1.65V$
 $G_{amp} = (R23 + R24) / R24 = 2$
 $G_{res} = R19 / (R18 + R19) = 0.5$
 $AMP_{IO_OUT_0} = FPGA_{IO_OUT_0} * G_{res} * G_{amp} + U_{offset}$
 FPGA输出0~3.3方波，运放输出-1.65~1.65的方波
 如需修改幅值和偏置，自行修改公式中的阻值
 建议增益通过R18、R19来调整
 偏置通过R33、R36来调整

