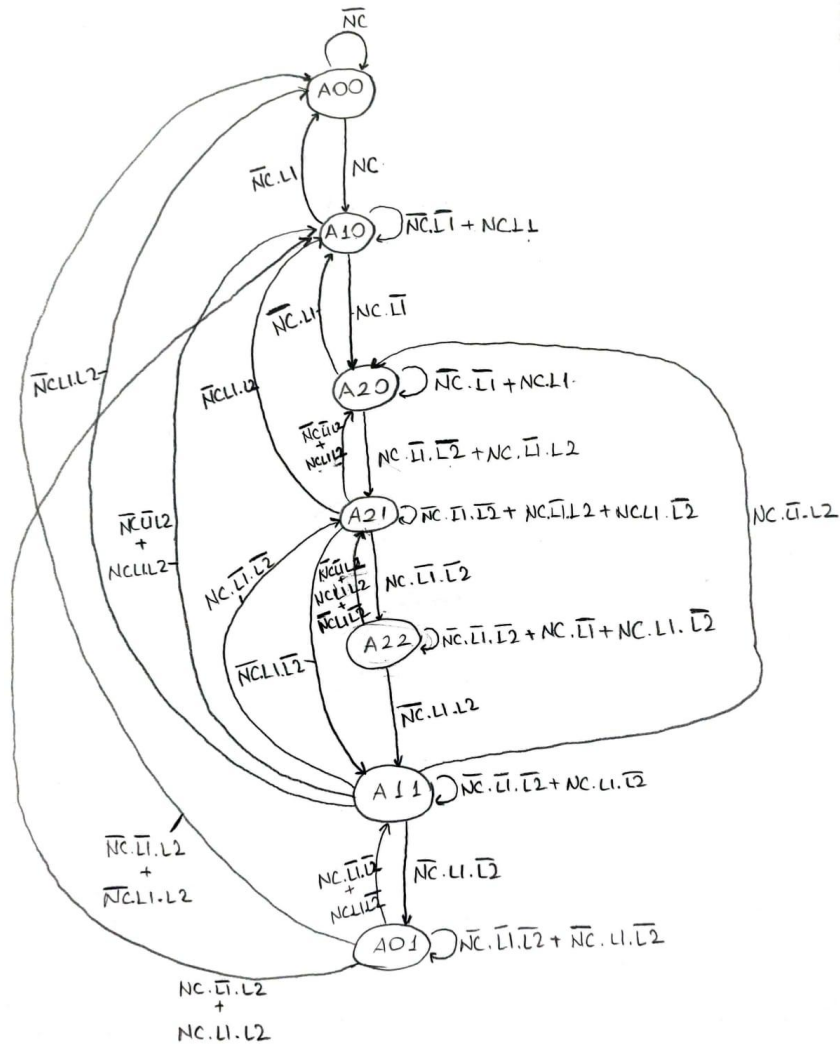


EE 213 Digital Design Project

Melike DOĞRU
Sena ÇELEBİ

STATE MACHINE DIAGRAM



INPUT EQUATIONS

$$\star A_{00}(t+1) = A_{00} \cdot \overline{NC} + A_{10} \cdot \overline{NC} \cdot L_1 + A_{01} \cdot (\overline{NC} \cdot L_1 \cdot L_2 + \overline{NC} \cdot \overline{L_1} \cdot \overline{L_2}) + A_{11} (\overline{NC} \cdot L_1 L_2)$$

$$\star A_{10}(t+1) = \overline{NC} + A_{10} (\overline{NC} \cdot \overline{L_1} + NC \cdot L_1) + A_{20} \cdot \overline{NC} \cdot L_1 + A_{21} (\overline{NC} \cdot L_1 \cdot L_2) + A_{11} (\overline{NC} \cdot \overline{L_1} \cdot L_2 + NC \cdot L_1 \cdot L_2) + A_{01} (NC \cdot \overline{L_1} \cdot L_2 + NC \cdot L_1 \cdot \overline{L_2})$$

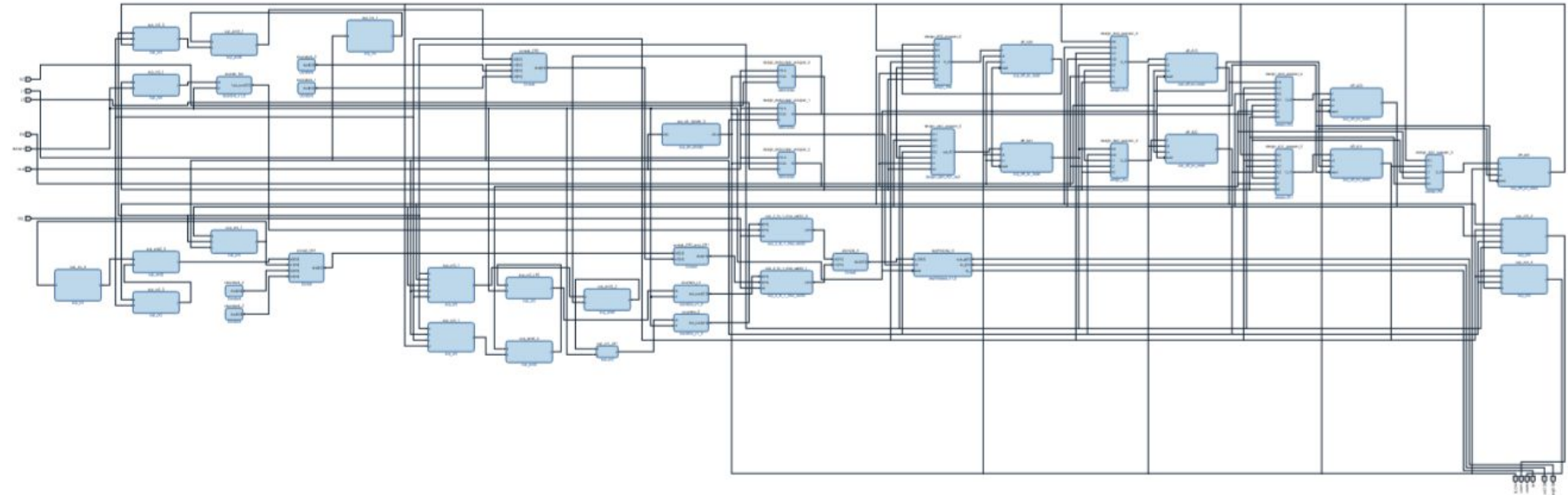
$$\star A_{20}(t+1) = A_{10} \cdot NC \cdot \overline{L_1} + A_{20} (\overline{NC} \cdot \overline{L_1} + NC \cdot L_1) + A_{21} (\overline{NC} \cdot \overline{L_1} \cdot L_2 + NC \cdot L_1 \cdot L_2) + A_{11} (NC \cdot \overline{L_1} \cdot L_2)$$

$$\star A_{21}(t+1) = A_{20} (NC \cdot \overline{L_1} \cdot \overline{L_2} + NC \cdot \overline{L_1} \cdot L_2) + A_{21} (\overline{NC} \cdot \overline{L_1} \cdot \overline{L_2} + NC \cdot \overline{L_1} \cdot L_2 + NC \cdot L_1 \cdot \overline{L_2}) + A_{22} (\overline{NC} \cdot \overline{L_1} \cdot L_2 + NC \cdot L_1 \cdot L_2 + \overline{NC} \cdot L_1 \cdot \overline{L_2}) + A_{11} (NC \cdot \overline{L_1} \cdot \overline{L_2})$$

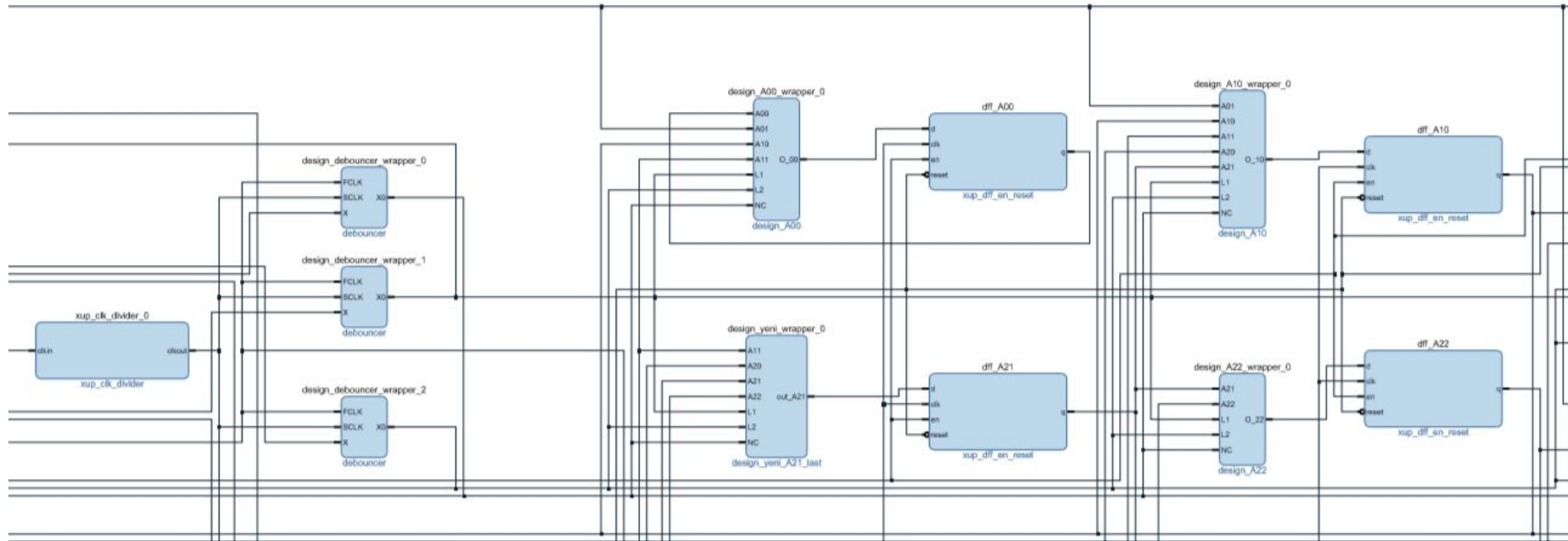
$$\star A_{22}(t+1) = A_{21} (NC \cdot \overline{L_1} \cdot \overline{L_2}) + A_{22} (\overline{NC} \cdot \overline{L_1} \cdot \overline{L_2} + NC \cdot \overline{L_1} + NC \cdot L_1 \cdot \overline{L_2})$$

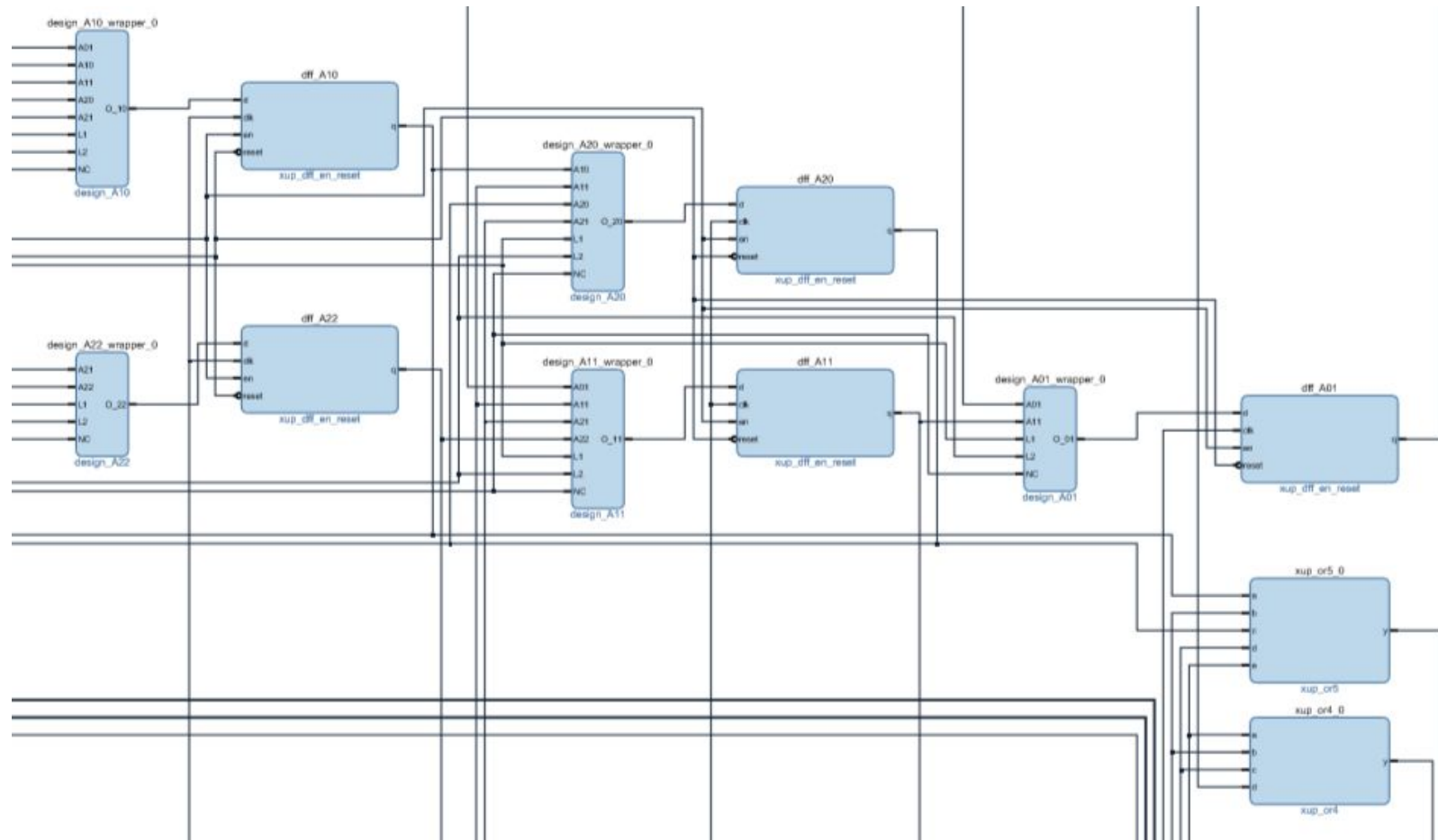
$$\star A_{11}(t+1) = A_{22} (\overline{NC} \cdot L_1 \cdot L_2) + A_{11} (\overline{NC} \cdot \overline{L_1} \cdot \overline{L_2} + NC \cdot L_1 \cdot \overline{L_2}) + A_{21} (\overline{NC} \cdot L_1 \cdot \overline{L_2}) + A_{01} (NC \cdot \overline{L_1} \cdot \overline{L_2} + NC \cdot L_1 \cdot \overline{L_2})$$

$$\star A_{01}(t+1) = A_{11} (\overline{NC} \cdot L_1 \cdot \overline{L_2}) + A_{01} (\overline{NC} \cdot \overline{L_1} \cdot \overline{L_2} + \overline{NC} \cdot L_1 \cdot \overline{L_2})$$

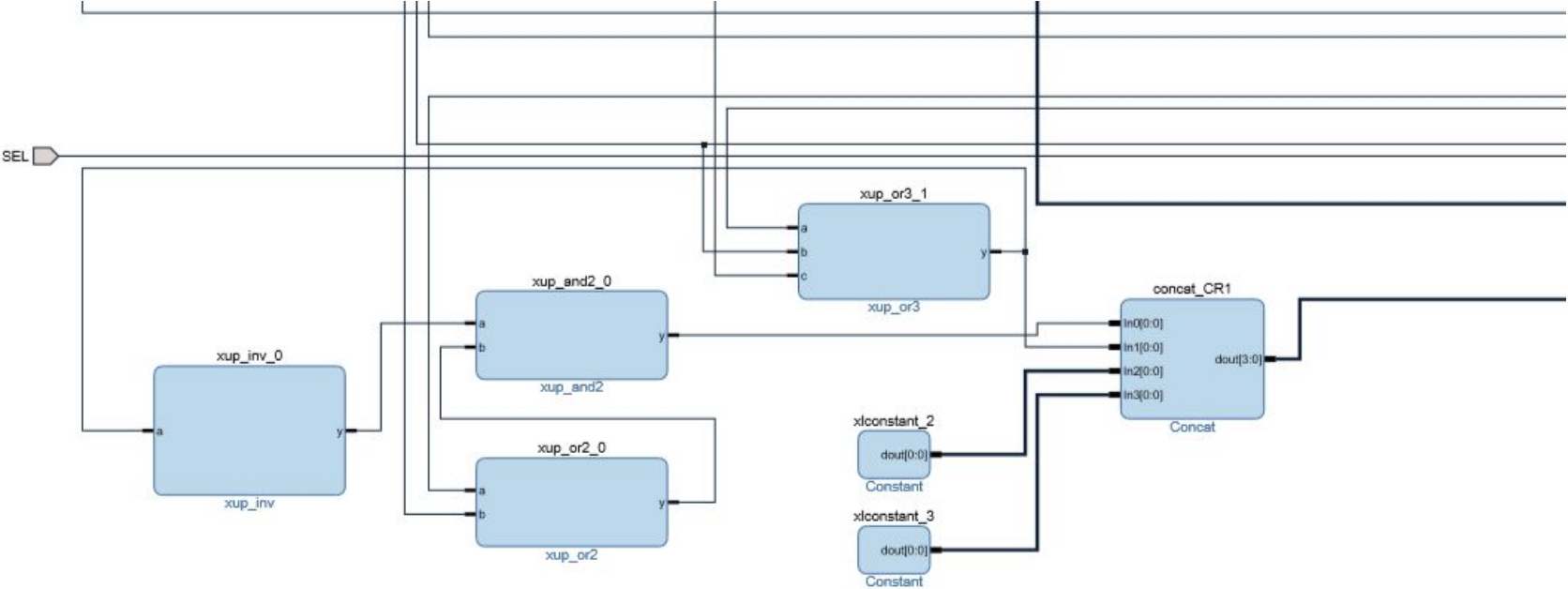


D FLIP-FLOPS

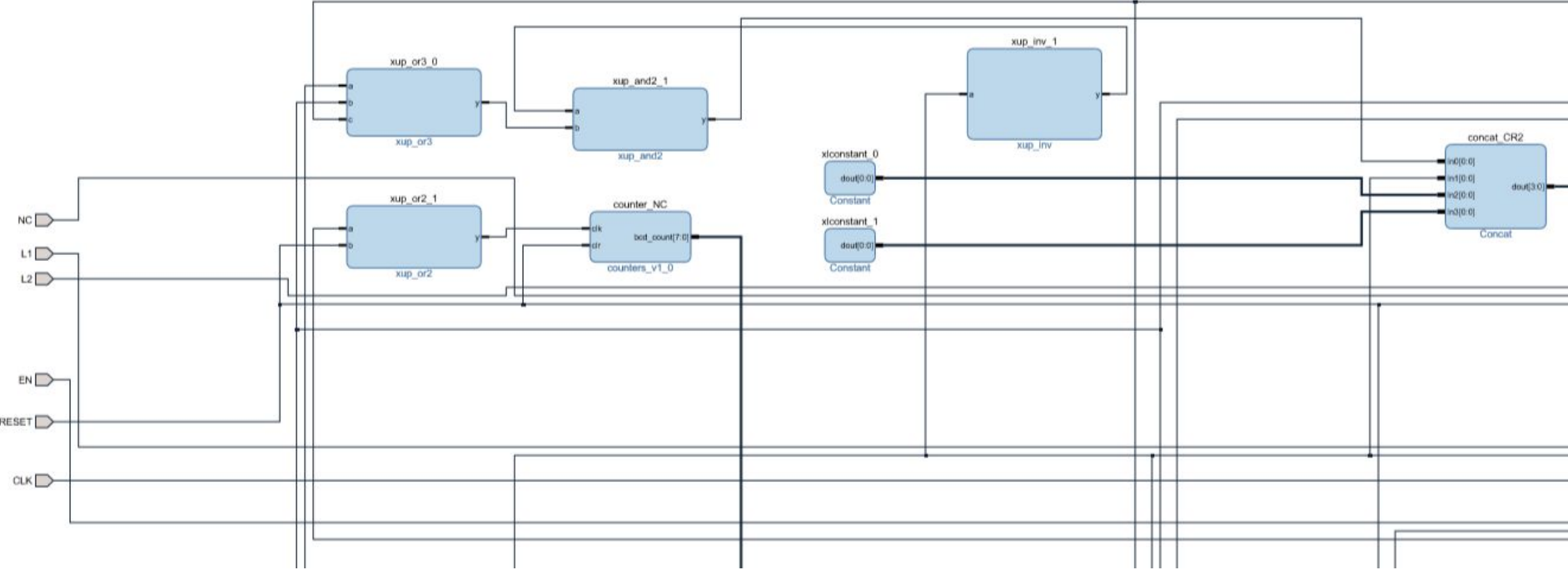




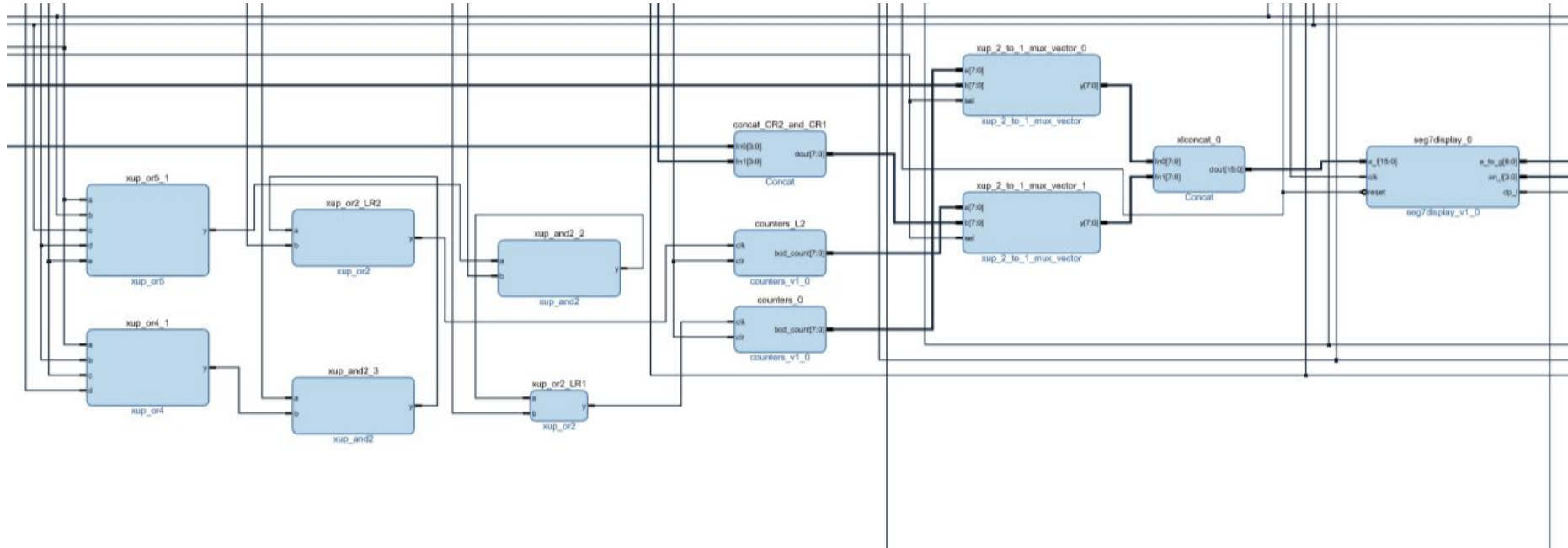
CONCAT FOR CR1



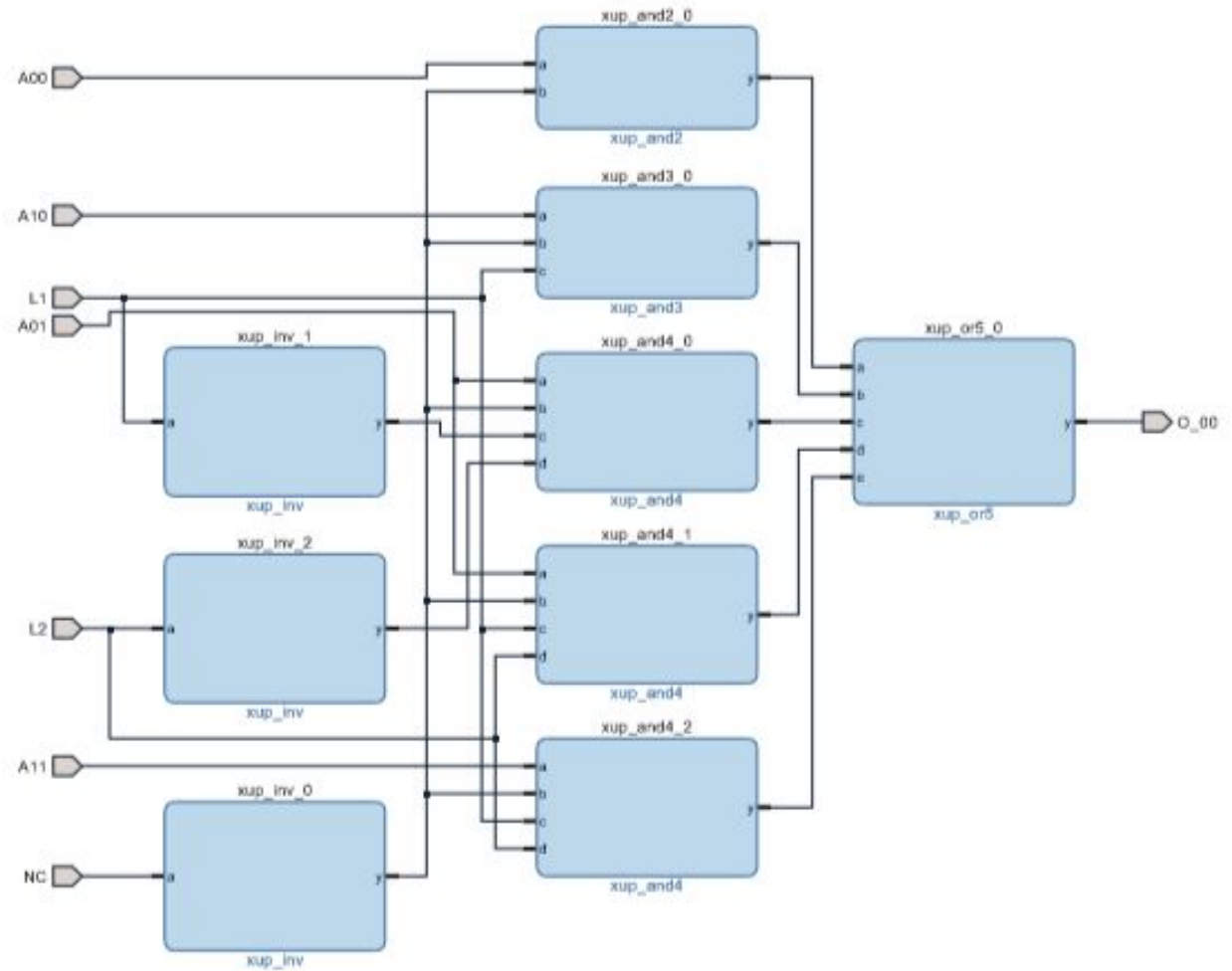
CONCAT FOR CR2



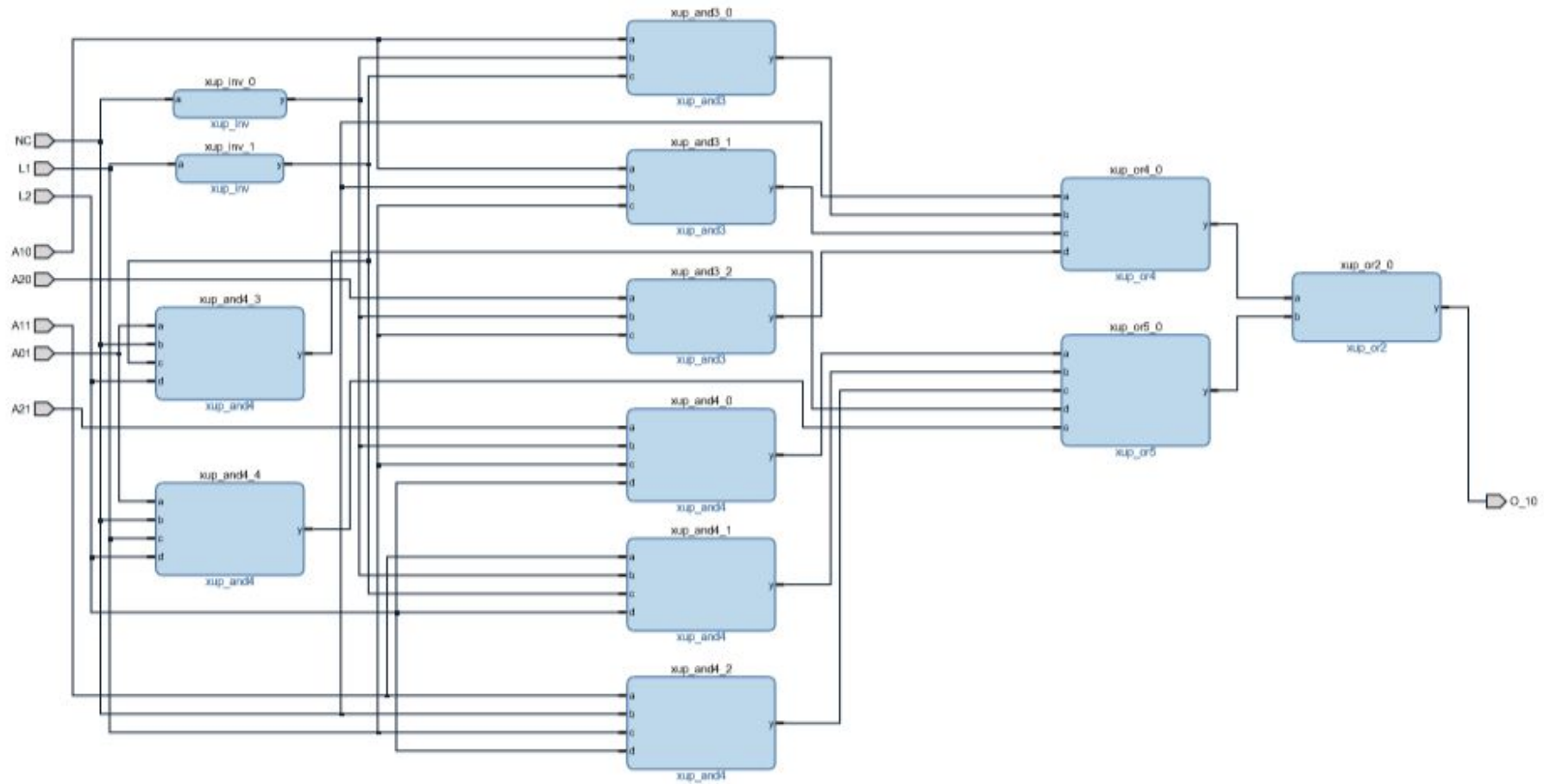
MUX PART



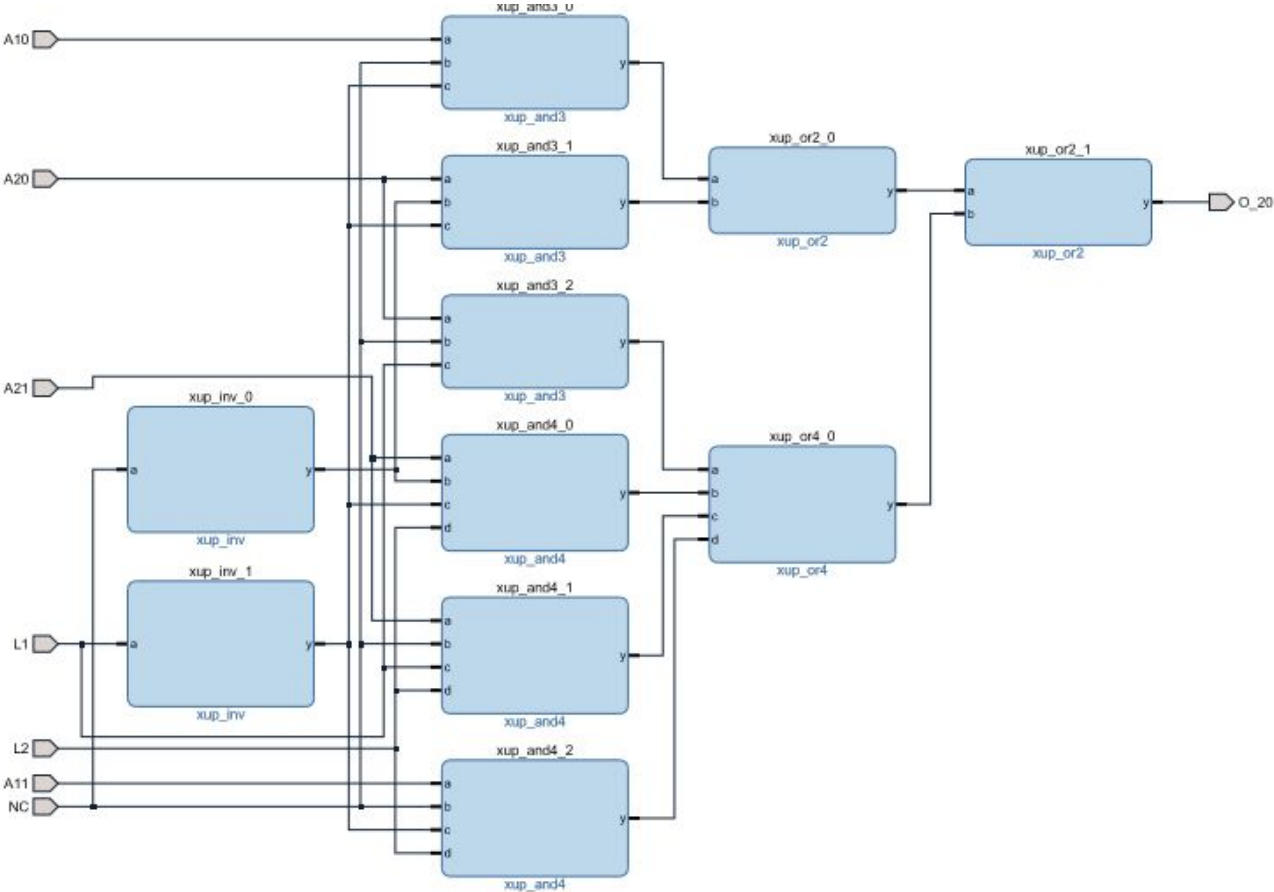
IP FOR A00



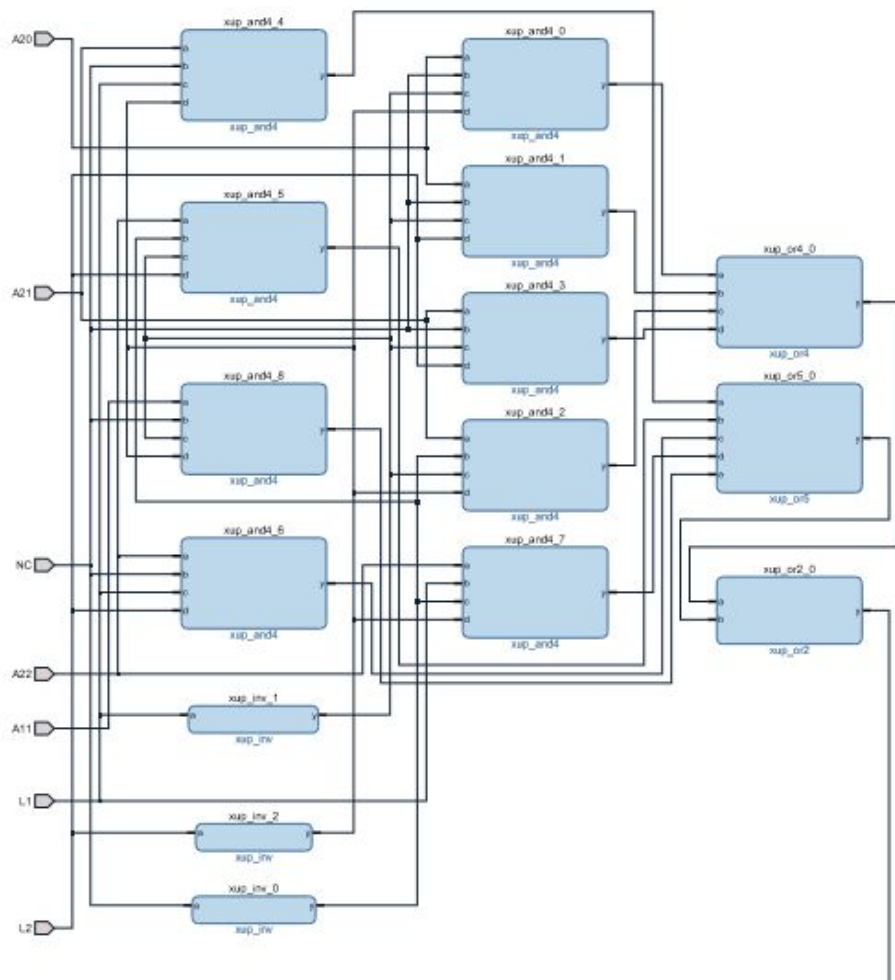
IP FOR A10



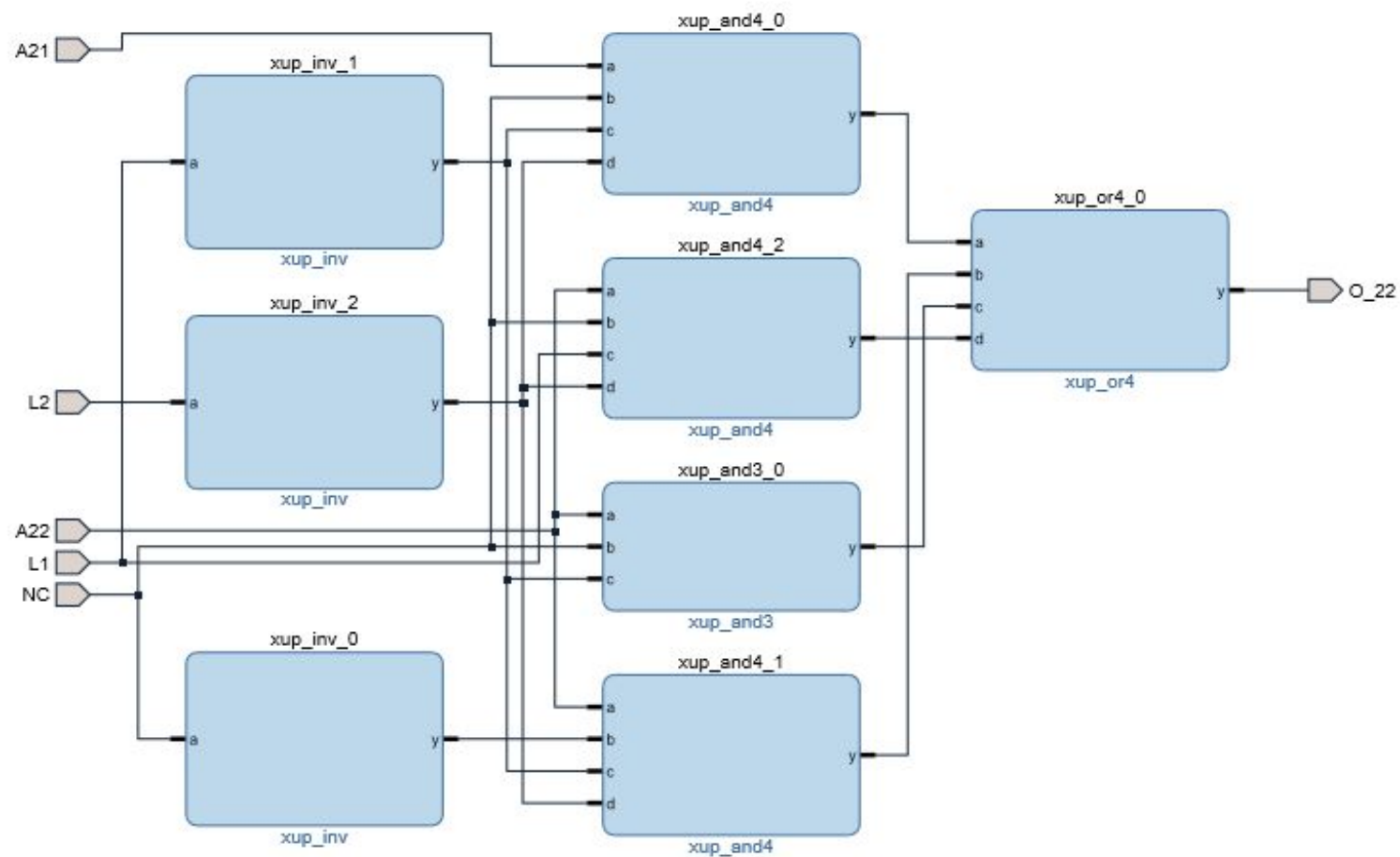
IP FOR A20



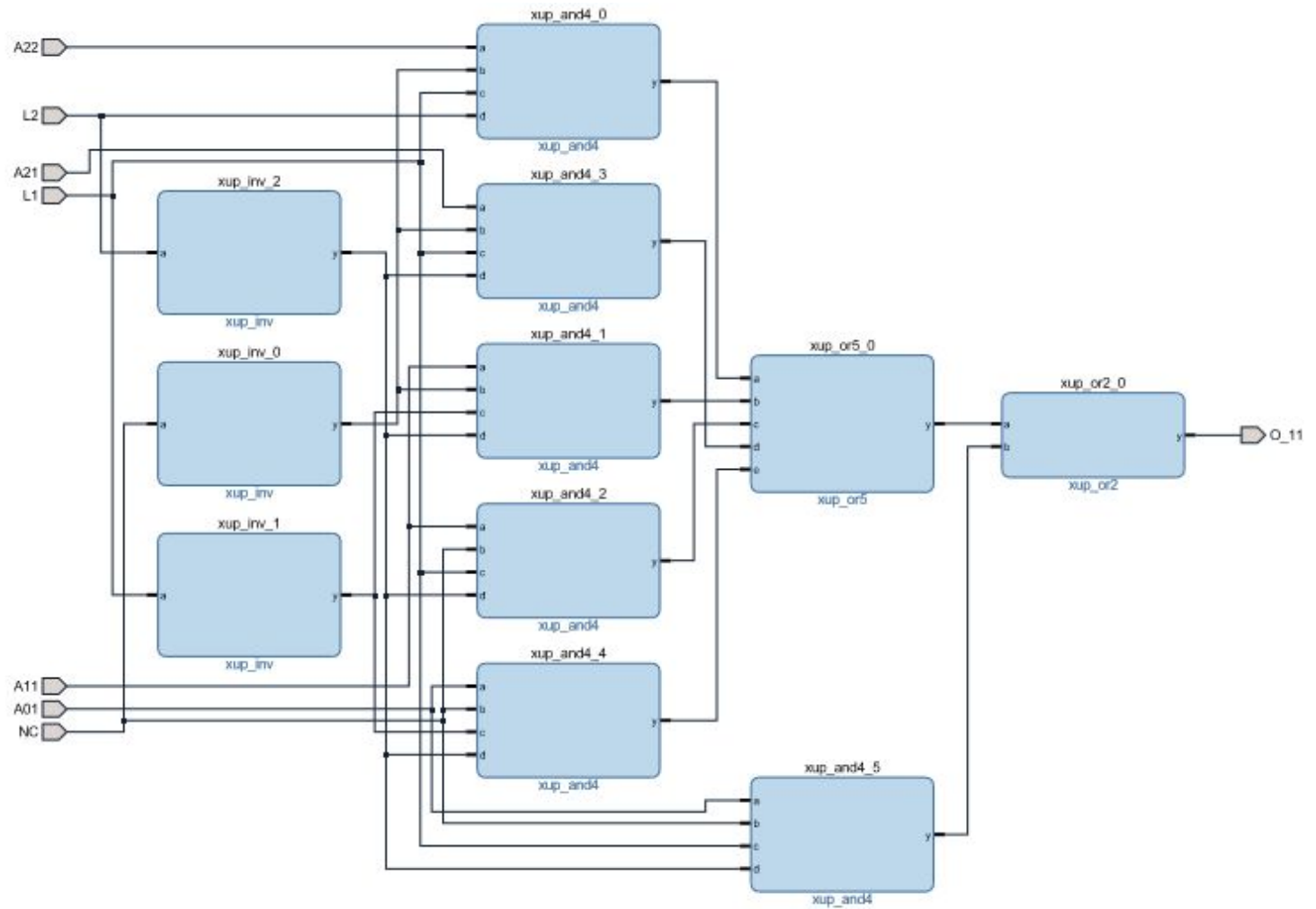
IP FOR A21



IP FOR A22



IP FOR A11



IP FOR A01

