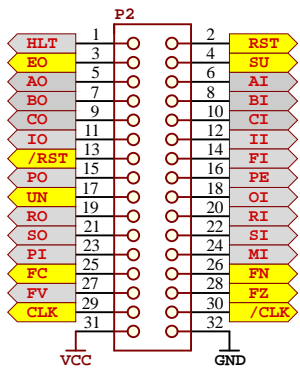
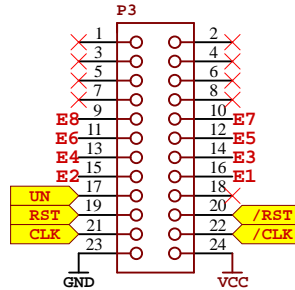


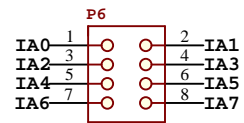
Control BUS Connector



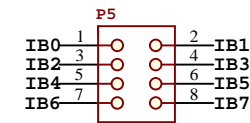
OUTPUT Connector



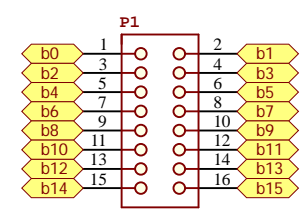
Register A input



Register B Input

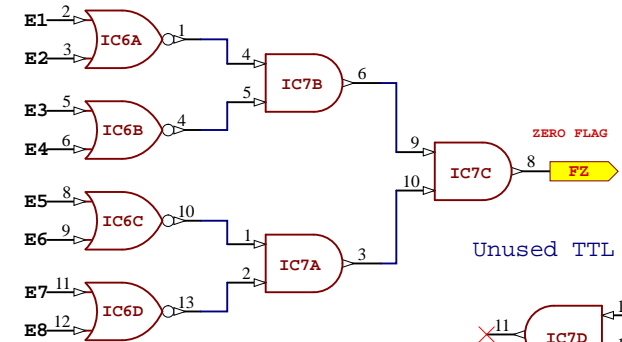


Data BUS Connector

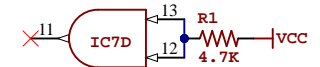


Input significant bit weigh goes from IA7 or YB7 (lower) to IA0 or YB0 (higher)

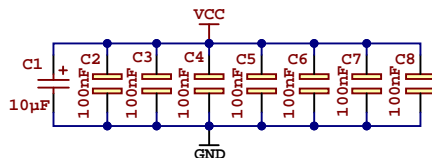
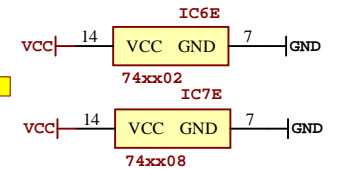
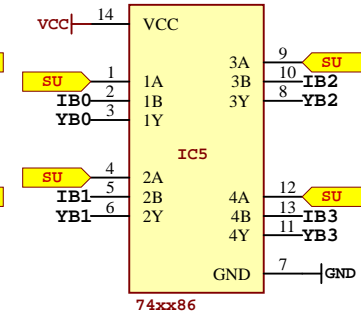
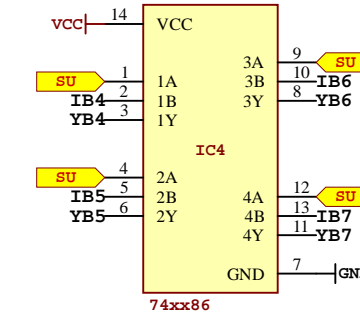
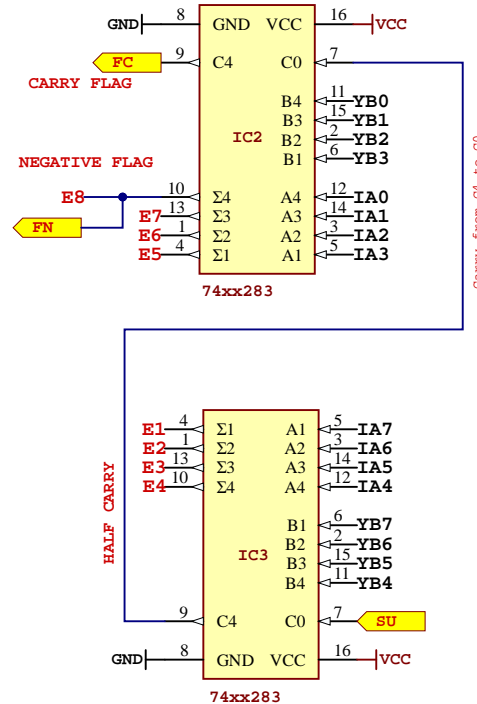
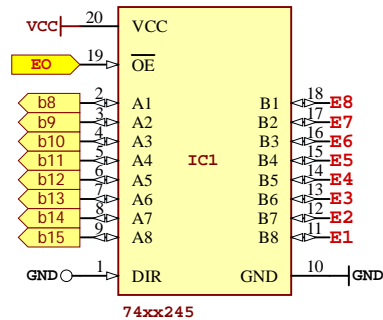
Zero Flag Logic



Unused TTL Inputs



Operation goes from E1 to E4 and carry is passed from C4 to C0. The ADDER inputs order goes from A1, B1 to A4, B4. Cascade is from IC3 to IC2.



Decoupling Capacitors

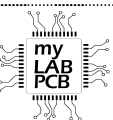
C0 pin, initial carry should set to SU signal. On ADD operation SU is LOW and Carry is 0, for SUB operation SU is HIGH and Carry becomes 1 to accomplish two's complement binary representation.

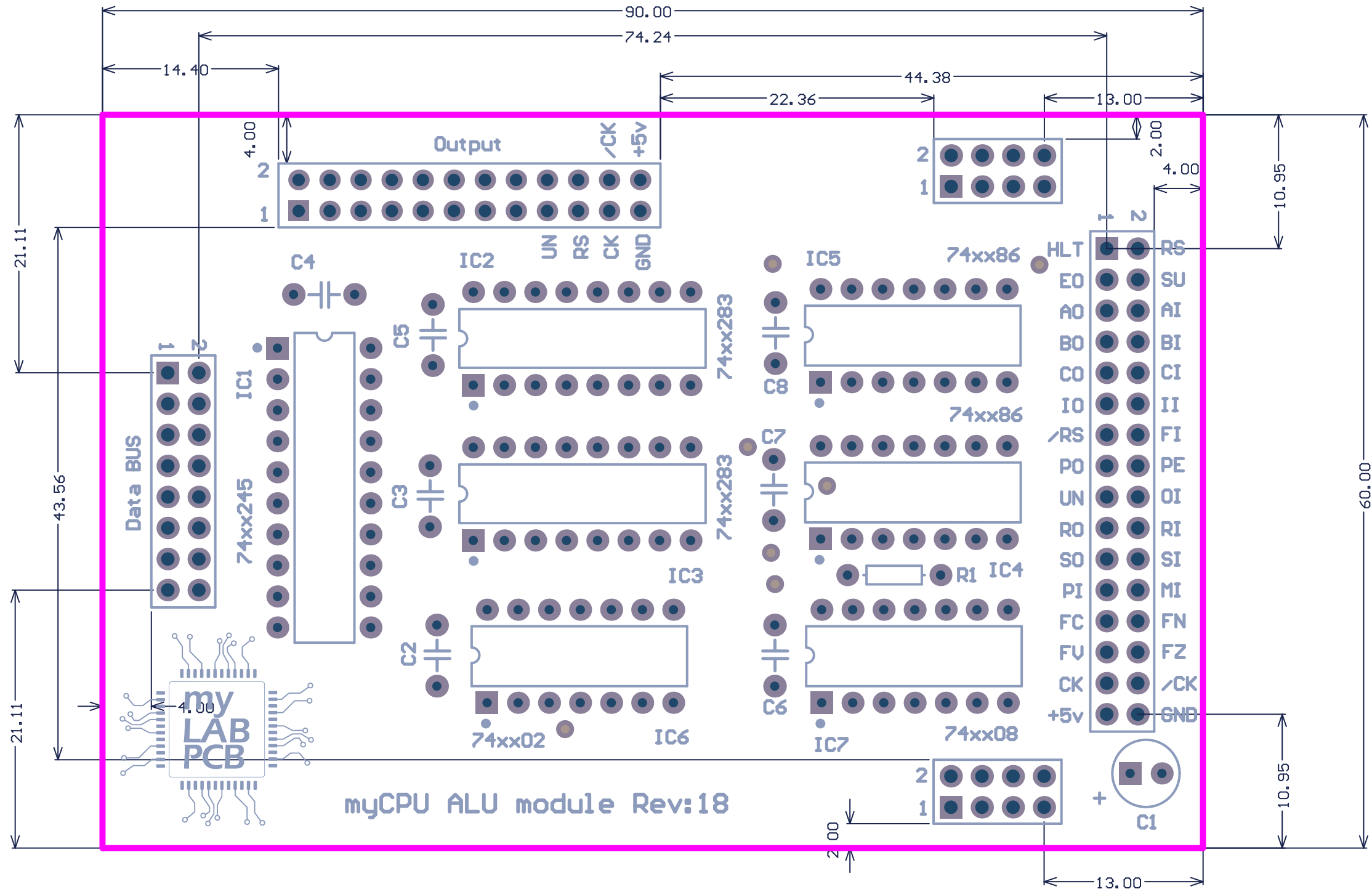
Project: myCPU ALU module

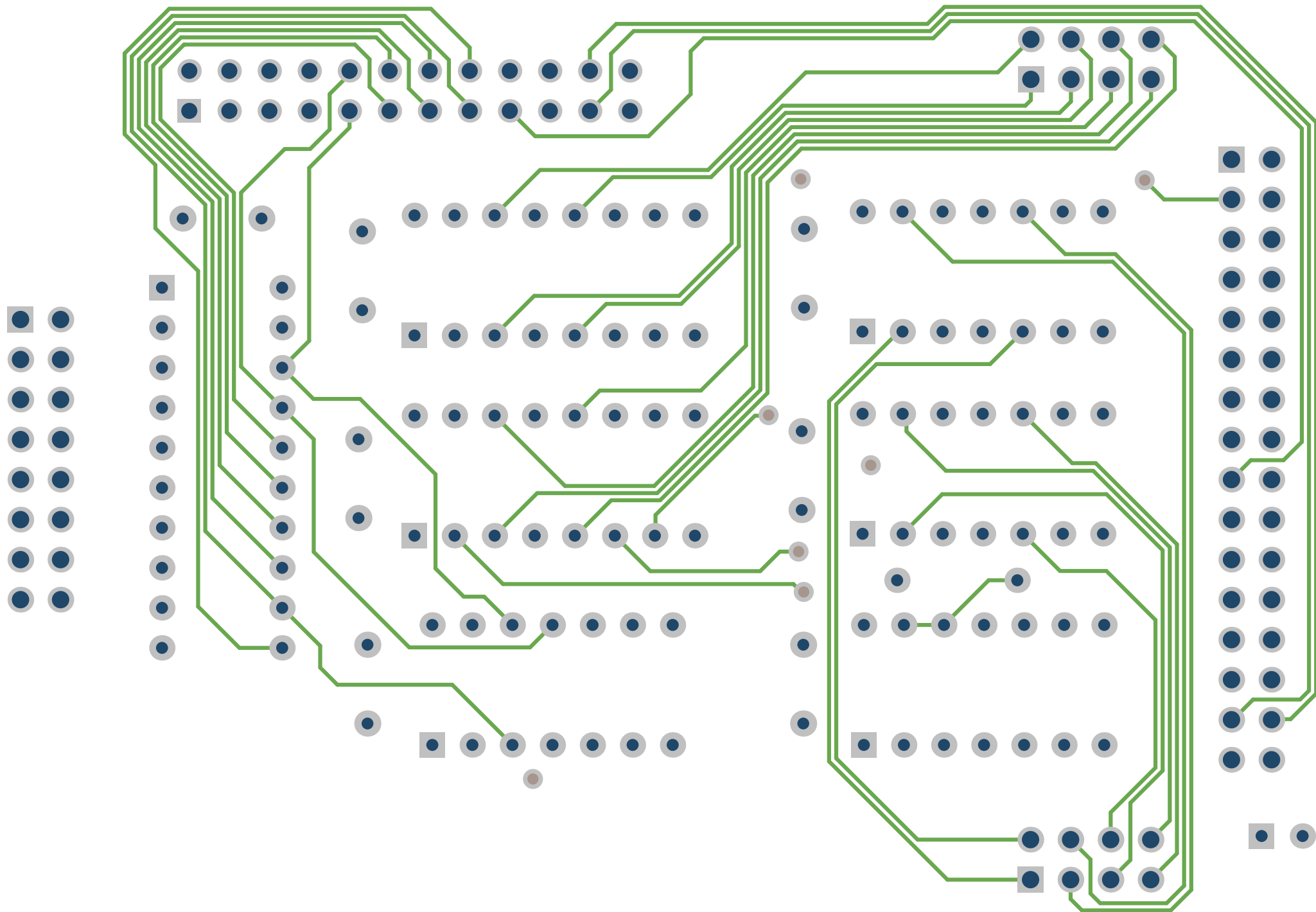
Revision: 18

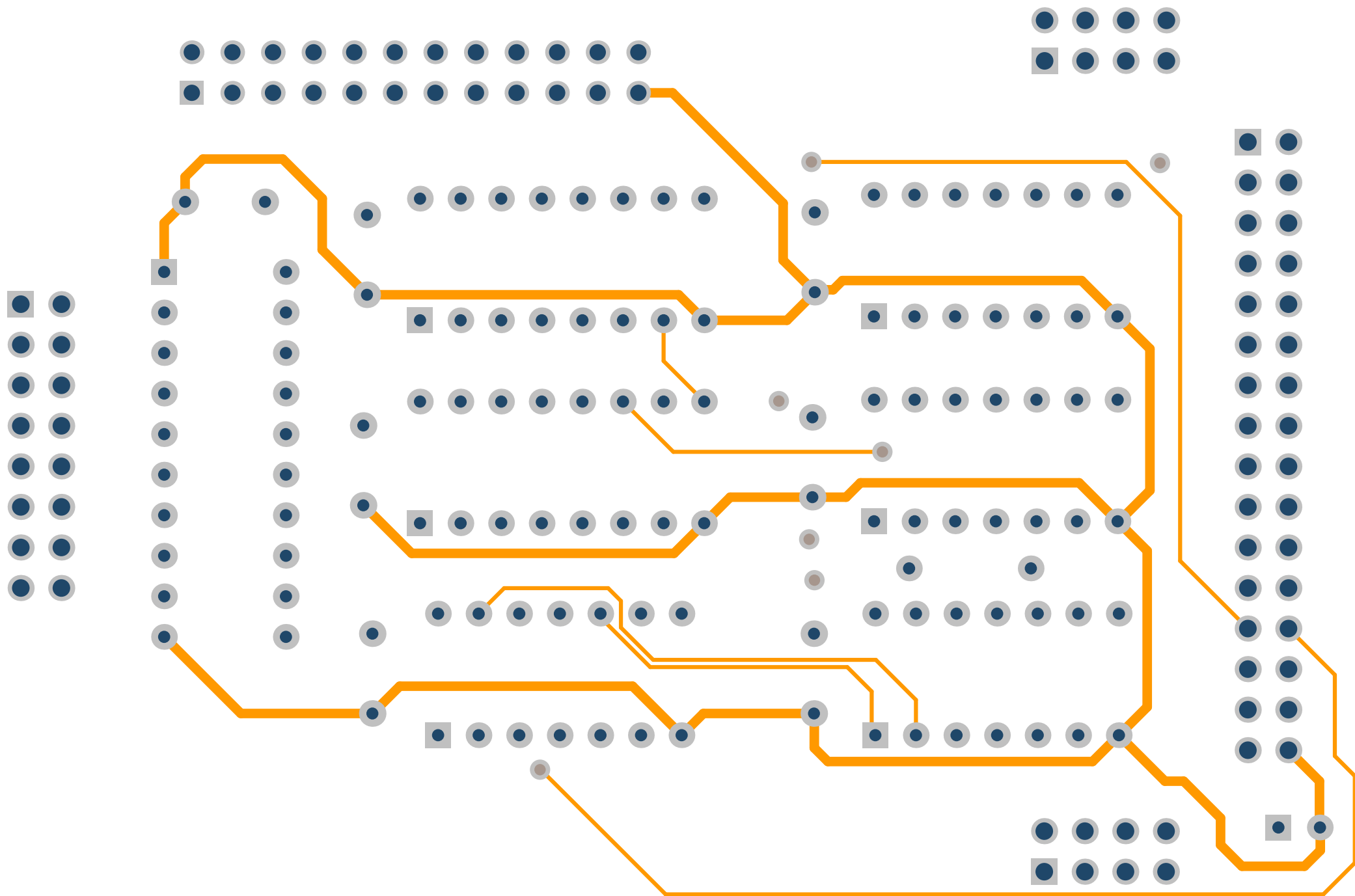
Date: 03-Jan-24

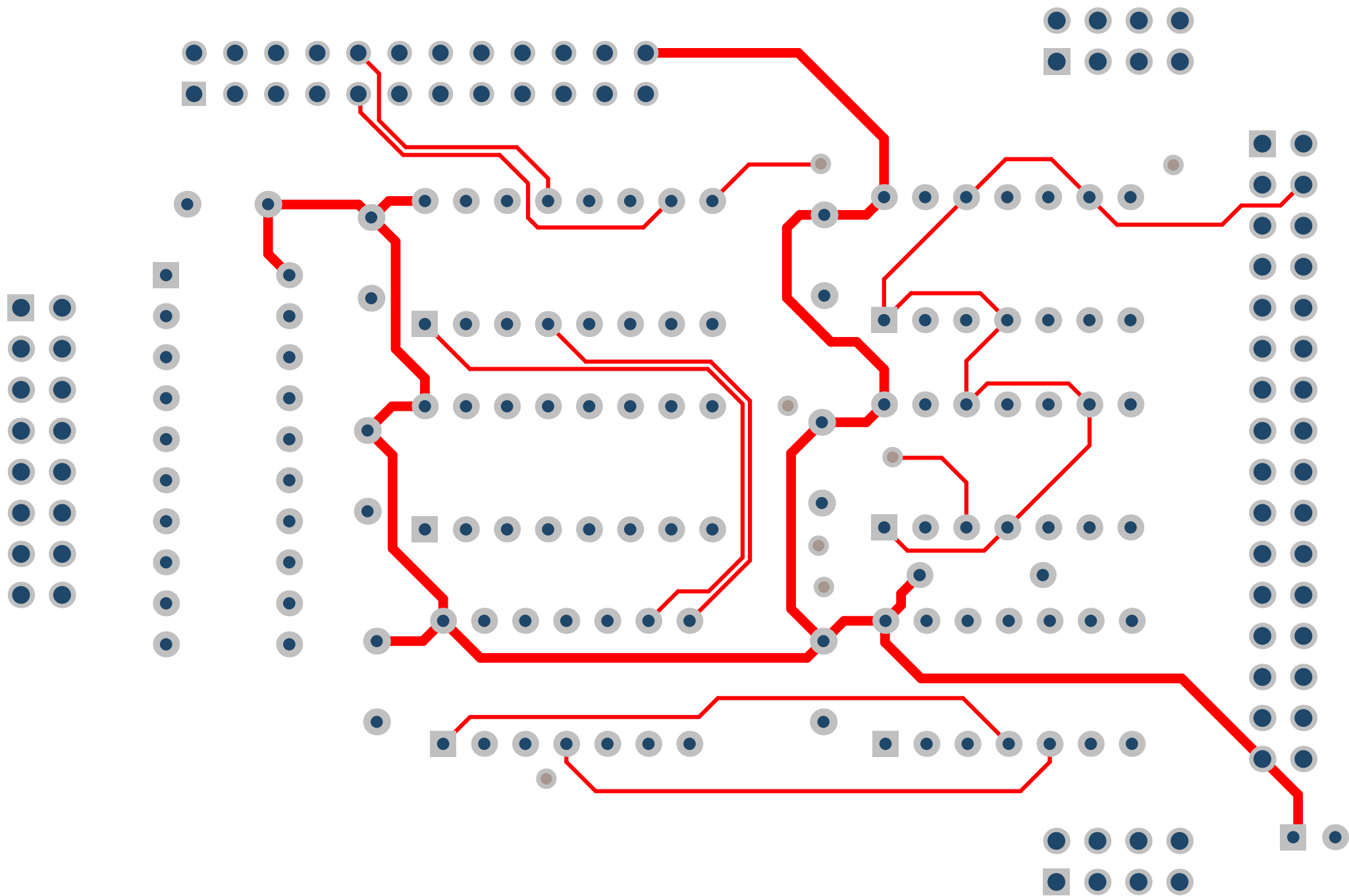
Author: Rafa Hernández

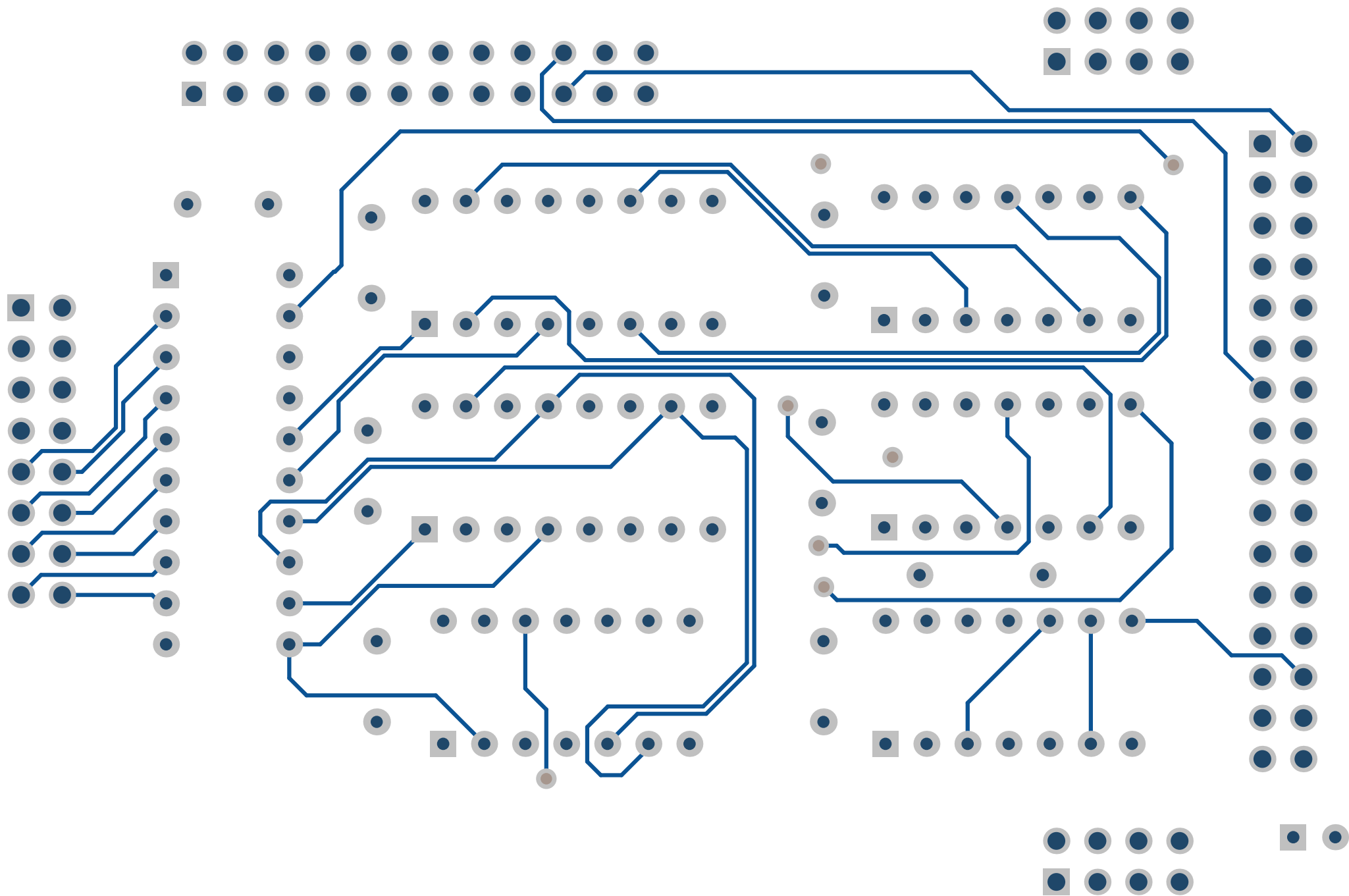


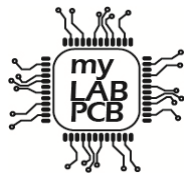












Bill of Materials

myCPU ALU module

Description	Value	Q
Electrolytic capacitor 16v/50v	10µF	1
Ceramic or tantalum capacitor	100nF	6
Ceramic capacitor	100nF	1
Non inverting bus transceiver	74xx245	1
4-Bits Full adder with fast carry	74xx283	2
Quad 2-input XOR gates	74xx86	2
Quad 2-input NOR gates	74xx02	1
Quad 2-input AND gates	74xx08	1
Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 16p	16p	1
Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 32p	32p	1
Socket Header, THT, pitch 2.54mm, Dual Row, Vertical, 24p	24p	1
Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 8p	8p	2
Resistor Axial	4.7K	1



Assembly List

myCPU ALU module

Designator	Description	Value
C1	Electrolytic capacitor 16v/50v	10 μ F
C2	Ceramic or tantalum capacitor	100nF
C3	Ceramic or tantalum capacitor	100nF
C4	Ceramic or tantalum capacitor	100nF
C5	Ceramic or tantalum capacitor	100nF
C6	Ceramic or tantalum capacitor	100nF
C7	Ceramic or tantalum capacitor	100nF
C8	Ceramic capacitor	100nF
IC1	Non inverting bus transceiver	74xx245
IC2	4-Bits Full adder with fast carry	74xx283
IC3	4-Bits Full adder with fast carry	74xx283
IC4	Quad 2-input XOR gates	74xx86
IC5	Quad 2-input XOR gates	74xx86
IC6	Quad 2-input NOR gates	74xx02
IC7	Quad 2-input AND gates	74xx08
P1	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 16p	16p
P2	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 32p	32p
P3	Socket Header, THT, pitch 2.54mm, Dual Row, Vertical, 24p	24p
P5	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 8p	8p
P6	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 8p	8p
R1	Resistor Axial	4.7K