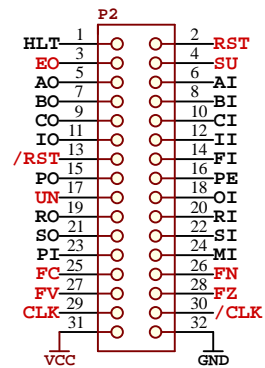
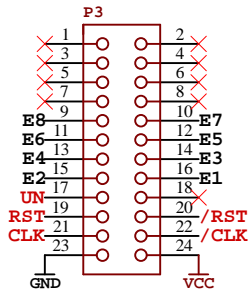


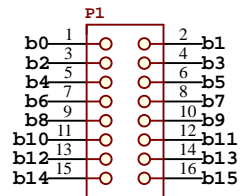
Control BUS Connector



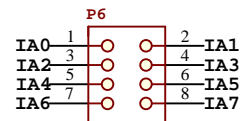
OUTPUT Connector



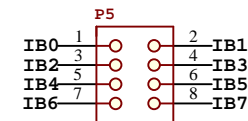
Data BUS Connector



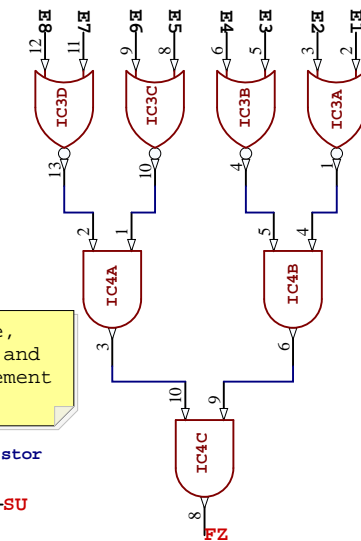
Register A input



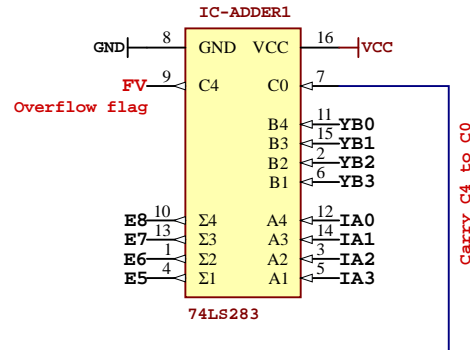
Register B Input



Zero Flag

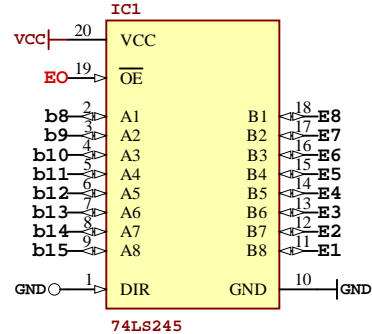
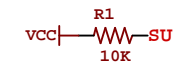


Input significant bit weigh goes from IA7 or YB7 (lower)

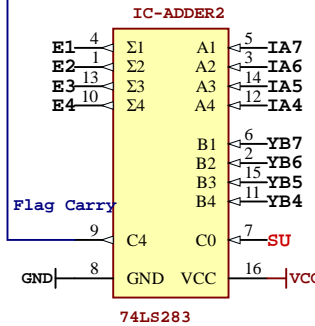


R1 has a critical value, should be between 4.7K and 10K to avoid two complement SU signal issues.

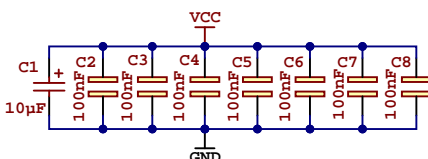
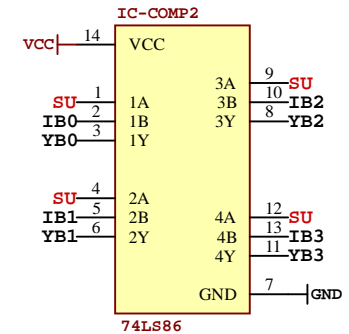
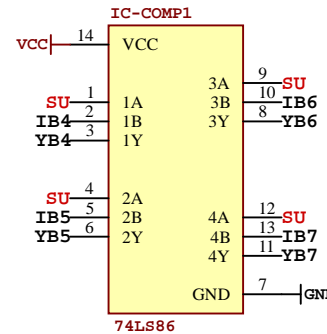
Pull-Up Resistor



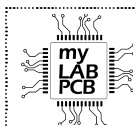
Add operation goes from E1 to E4 and carry is passed from C4 to C0. Then SUM inputs order goes from A1, B1 to A4, B4. Cascade is from IC-ADDER2 to IC-ADDER1.



C0, first carry should set to SU signal. On ADD operation SU is LOW and Carry is 0, for SUB operation SU is HIGH and Carry is 1.



Decoupling Capacitors

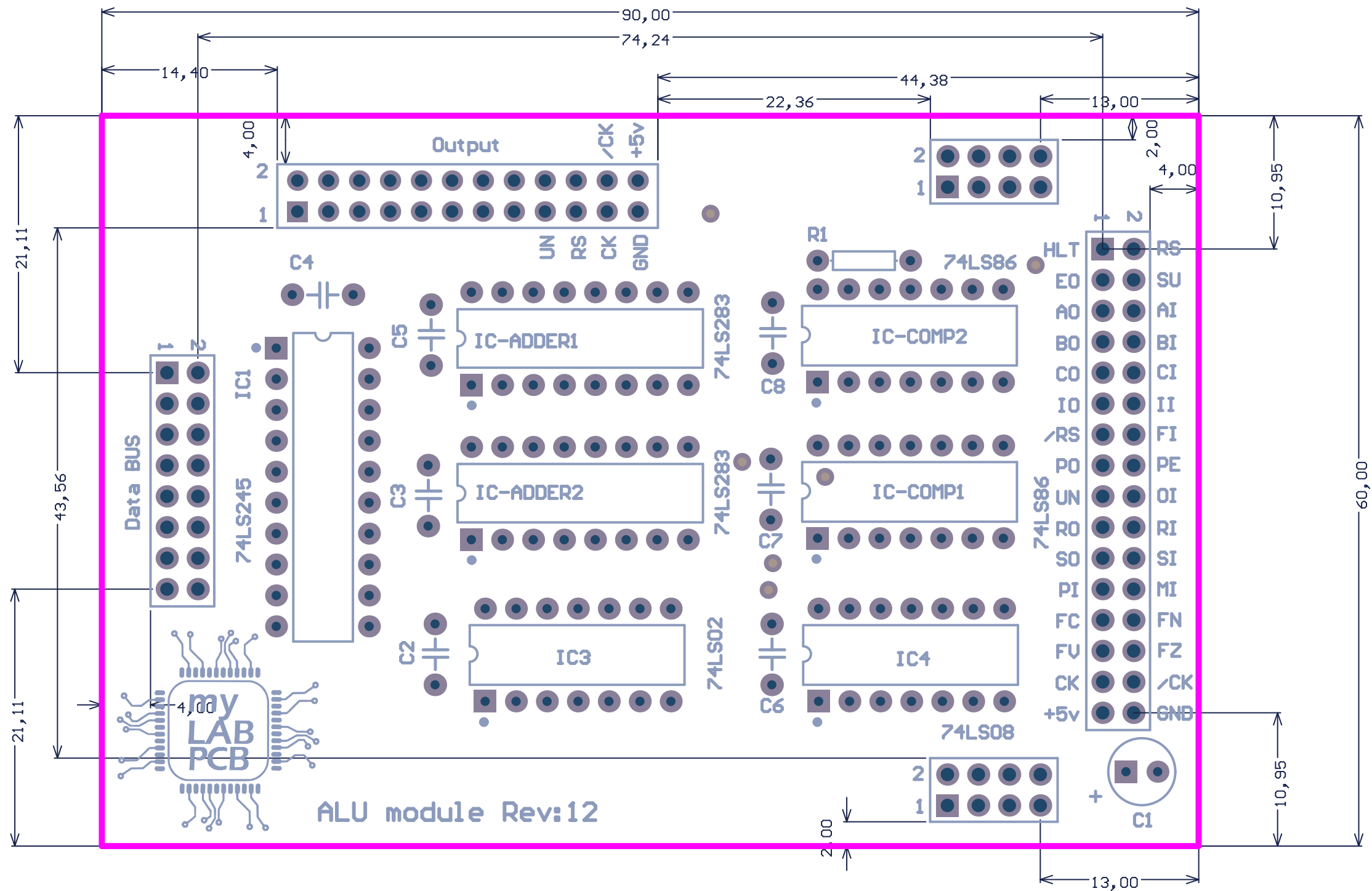


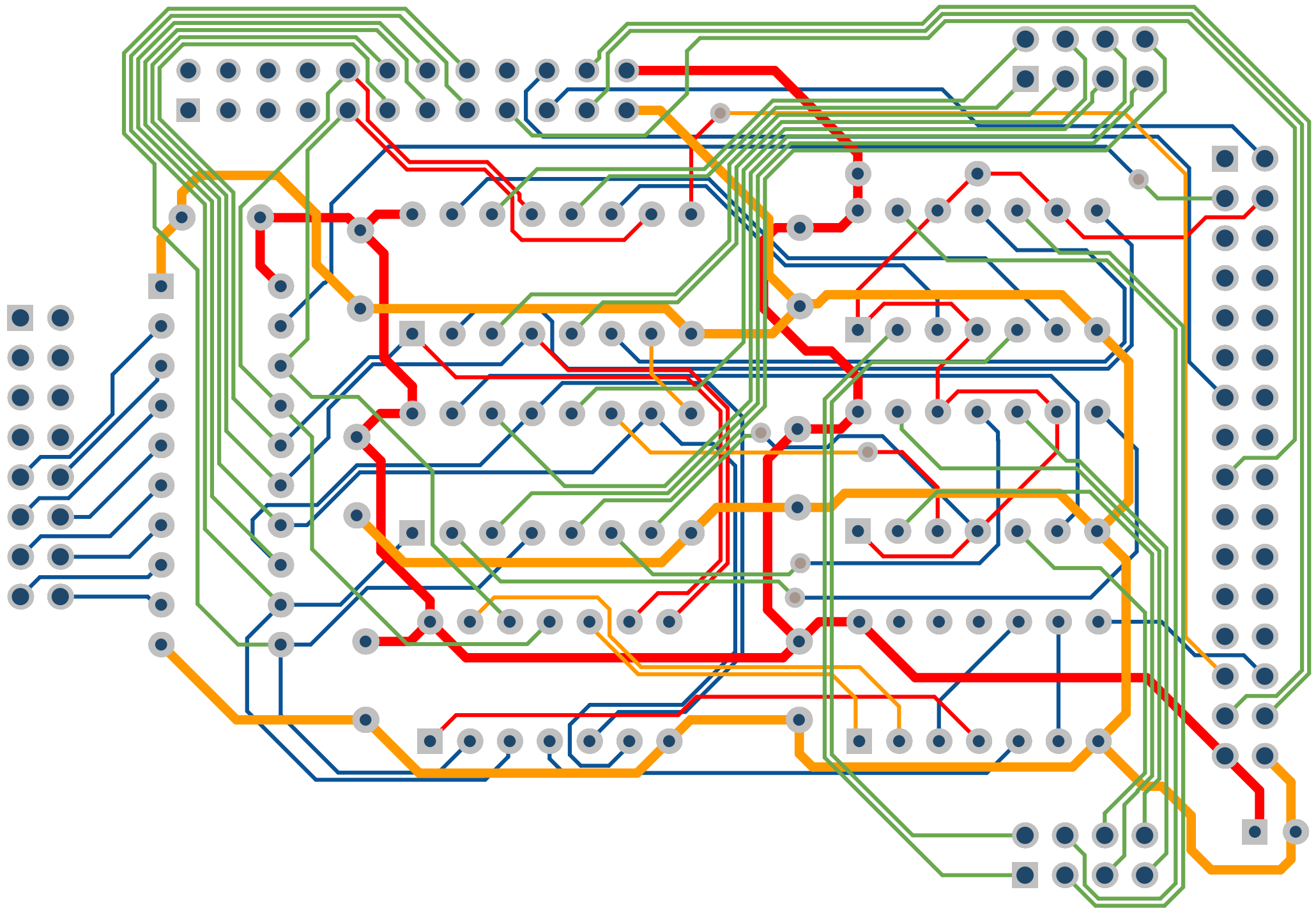
Project: myCPU ALU module

Revision: 12

Date: 05/10/2021

Author: Rafa Hernández







Bill of Materials

Designator	Description	Value	Q
C1	Electrolytic capacitor 16v/50v	10μF	1
C2, C3, C4, C5, C6, C7	Ceramic or tantalum capacitor	100nF	6
C8	Ceramic capacitor	100nF	1
IC1	Non inverting bus transceiver	74LS245	1
IC3	Quad 2-input NOR gates	74LS02	1
IC4	Quad 2-input AND gates	74LS08	1
IC-ADDER1, IC-ADDER2	4-Bits Full adder with fast carry	74LS283	2
IC-COMP1, IC-COMP2	Quad 2-input XOR gates	74LS86	2
P1	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 16p	16p	1
P2	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 32p	32p	1
P3	Socket Header, THT, pitch 2.54mm, Dual Row, Vertical, 24p	24p	1
P5, P6	Pin Header, THT, pitch 2.54mm, Dual Row, Vertical, 8p	8p	2
R1	Resistor Axial	10K	1



Assembly List

Desig.	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	74LS245
IC3	Quad 2-input NOR gates	74LS02
IC4	Quad 2-input AND gates	74LS08
IC-ADDER1	4-Bits Full adder with fast carry	74LS283
IC-ADDER2	4-Bits Full adder with fast carry	74LS283
IC-COMP1	Quad 2-input XOR gates	74LS86
IC-COMP2	Quad 2-input XOR gates	74LS86
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	10K