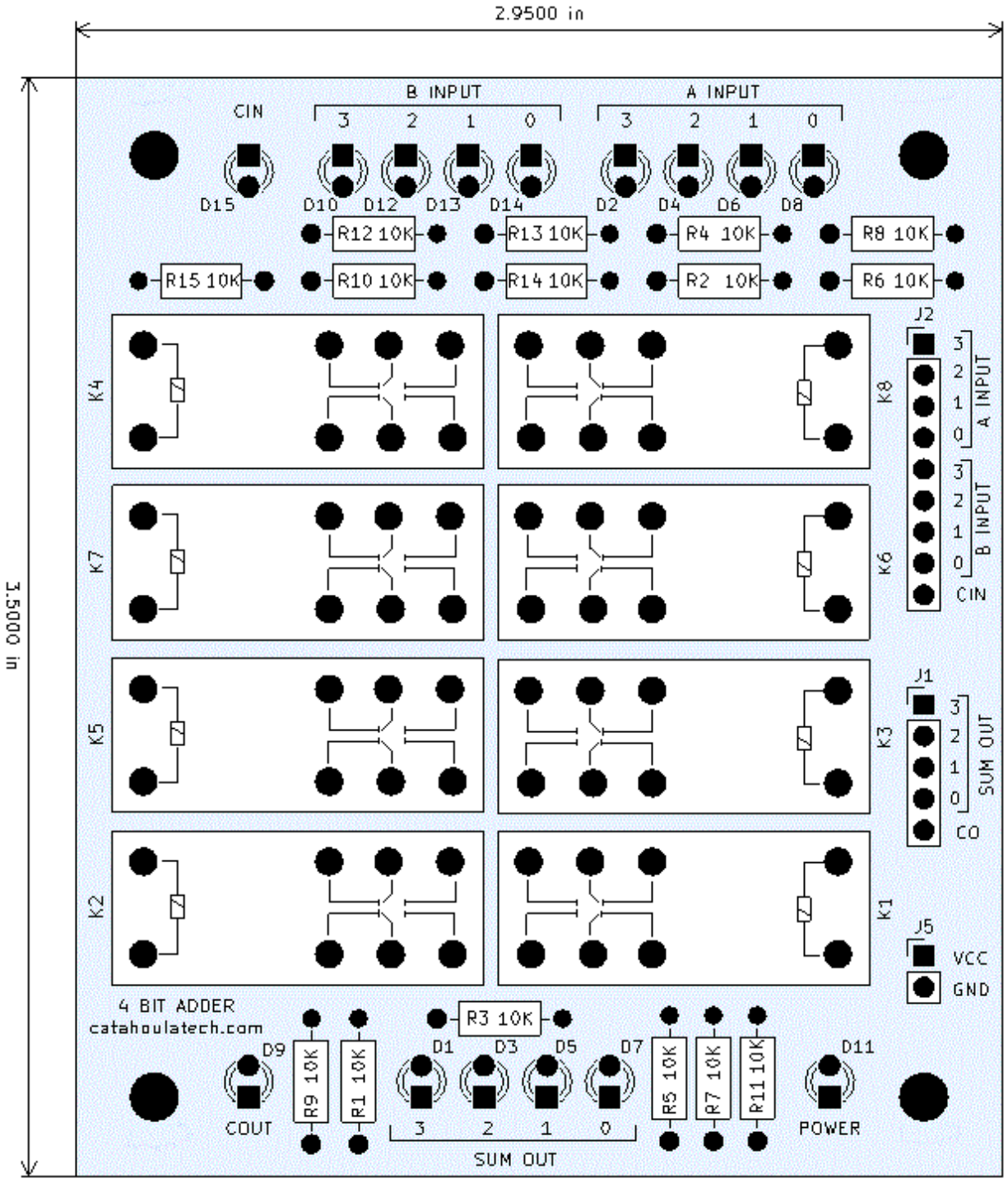
RL4008 – 4-bit binary full adder



Bill of Materials

Part	Value	Description
R1-R14	10K 1/4W	LED current limiting resistor (optional)
D1-D14	LED	3mm T-1 LED (optional)
K1-K8	G2R-2-12VDC	DPDT relay
J1-J5	Header	0.1” pitch header, right angle recommended

Mount holes are 4mm (#8 screw) diameter.

Input Ports

Name	Size	Description
A INPUT	4	Operand A
B INPUT	4	Operand B
CIN	1	Carry Input
VCC	1	Power supply 12VDC
GND	1	Power supply ground

Output Ports

Name	Size	Description
SUM OUT	4	Sum of Operand A + B + CIN
CO	1	Carry output

Logic function

SUM OUT [4:0] = A INPUT [3:0] + B INPUT [3:0] + CIN
CO (Carry Output) = SUM OUT[4]

Typical Application

The RL4008 module could be cascaded to implement larger data widths. 2's complement subtraction could be achieved by negating an operand by flipping all of its bits and adding 1 by driving the carry input high instead of low.