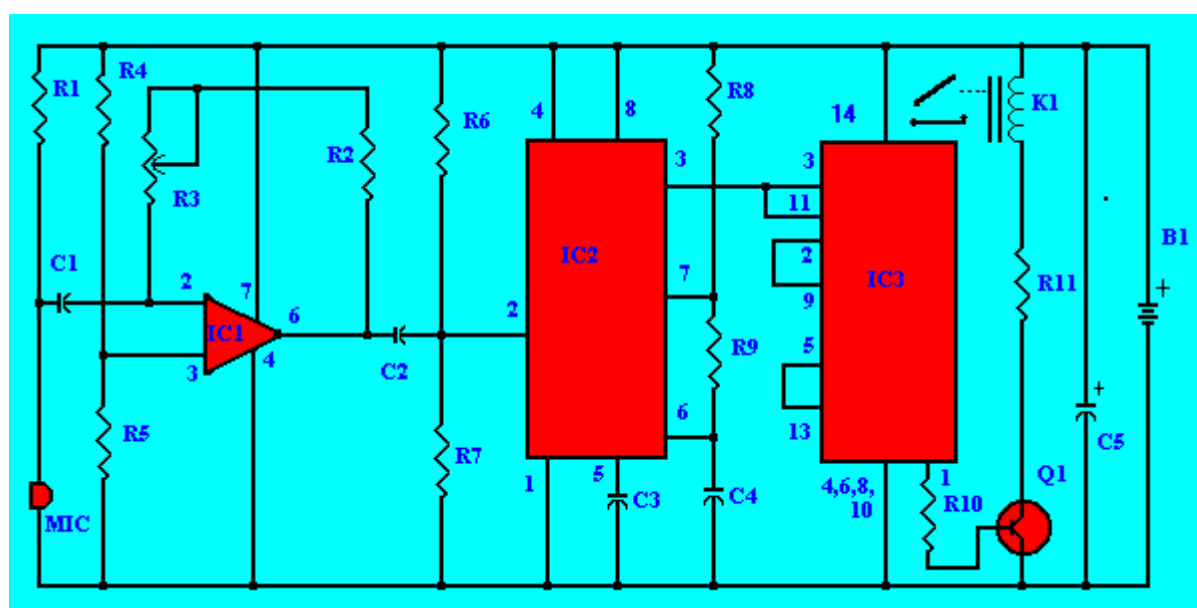


December 97 Project : Hand Clap Electronic Control

We have all seen the commercial on TV CLAP - ON - CLAP - OFF - THE - CLAPPER well here is a circuit that will perform that same function.

Circuit operation is as follows. A single hand clap will be picked up by the electric mic which is coupled through C1 into the op amp IC1. The output of IC1 triggers the 555 IC timer IC2 which is configured as a monostable multivibrator. The trigger pulse is stretched by IC2 and outputs a pulse to IC3 a D type flip flop. Because of the three state counter arrangement of IC3, two sharp claps are required before IC3 will output a high to Q1 which will turn on K1 relay and any device connected to K1's switch contacts. Two more claps will clock IC3 again and will turn off Q1 and any device connected to the K1's contacts. I had my unit connected to my xmas tree lights so that I wouldn't have to crawl behind the tree to turn the lights on and off. Sensitivity for the circuit is R3 and should be adjusted so that the circuit ignores normal room noise.

Hand Clap Electronic Control



IC1 = 741 OP AMP
IC2 = 555 TIMER
IC3 = 4013 DUAL D FLIP FLOP
Q1 = 2N2222 NPN

C1, C2, C3, C4 = .1 UF DISC
C5 = 47 UF ELECTROLYTIC

R1, R2, R4, R5, R10 = 10,000 OHMS
R6 = 150,000 OHMS
R7, R9 = 100,000 OHMS
R8 = 1 MEGOHM
R11 = 220 OHMS
R3 = 100,000 OHM TRIMMER POT.

B1 = 9 VOLT BATTERY
K1 = SPST REED RELAY 5 VOLT DC COIL
MIC = ELECTRIC MICROPHONE
