



ATHARVA EDUCATIONAL TRUST'S  
**ATHARVA COLLEGE OF ENGINEERING**

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# CLAP SWITCH

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## ABSTRACT

A clap switch is an electronic device that works based on clapping action, it converts sound energy into electrical pulses and provides these electrical pulses as input to the control circuit for controlling the light appliances.

A circuit which operates through clap sound otherwise similar to that sound is called clap switch. This switch activates once or twice clapped & which will be automatically turned OFF after some time.



# INTRODUCTION

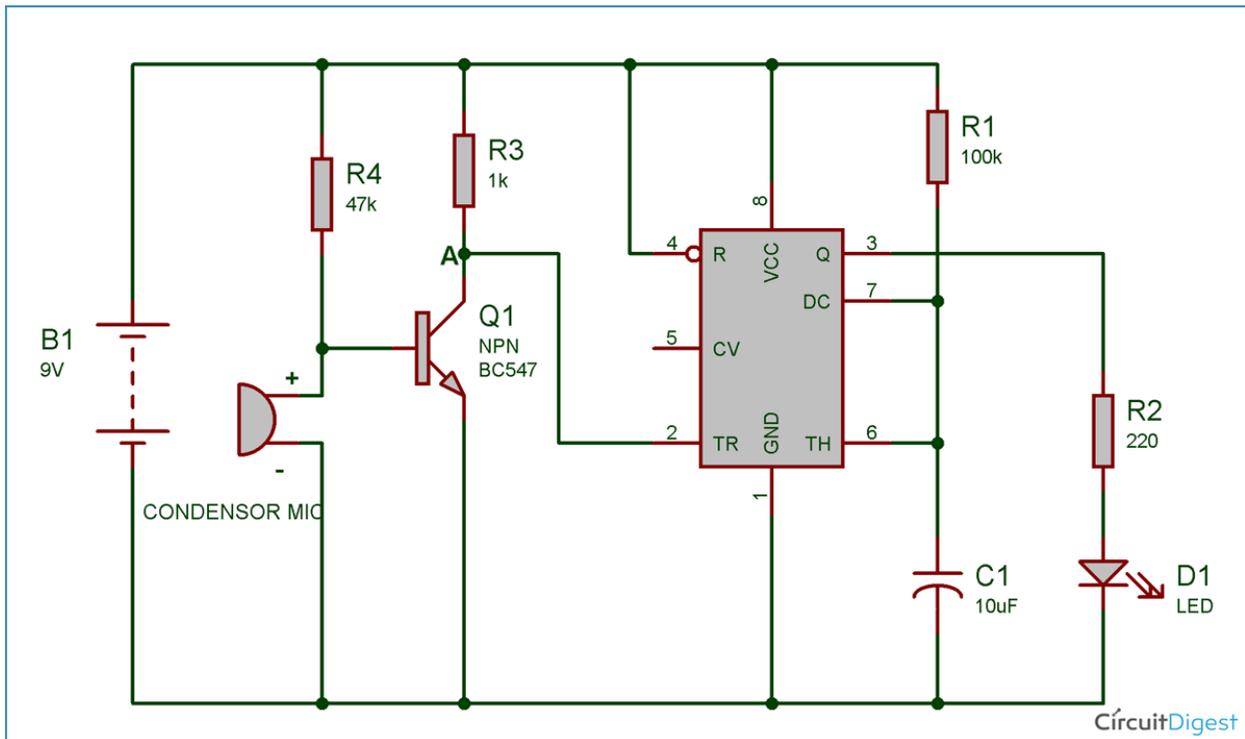
The fundamental concept of the clap switch is that the microphone used in this circuit receives the clap sound & generates a small signal to control a lamp. Generally, this switch is operated through sound. For instance, light, fan and TV can be controlled through clapping.

The operation of the circuit is simple. Clap and the lamp turns on. The condenser microphone picks up the sound of your claps, coughs, and the sound of that book knocked off the table. It produces a small electrical signal which is amplified by the succeeding transistor stage.

The working of this circuit is based on the amplifying nature of the transistor, switching nature of the transistor and the 555 timer IC as an electronic switch.

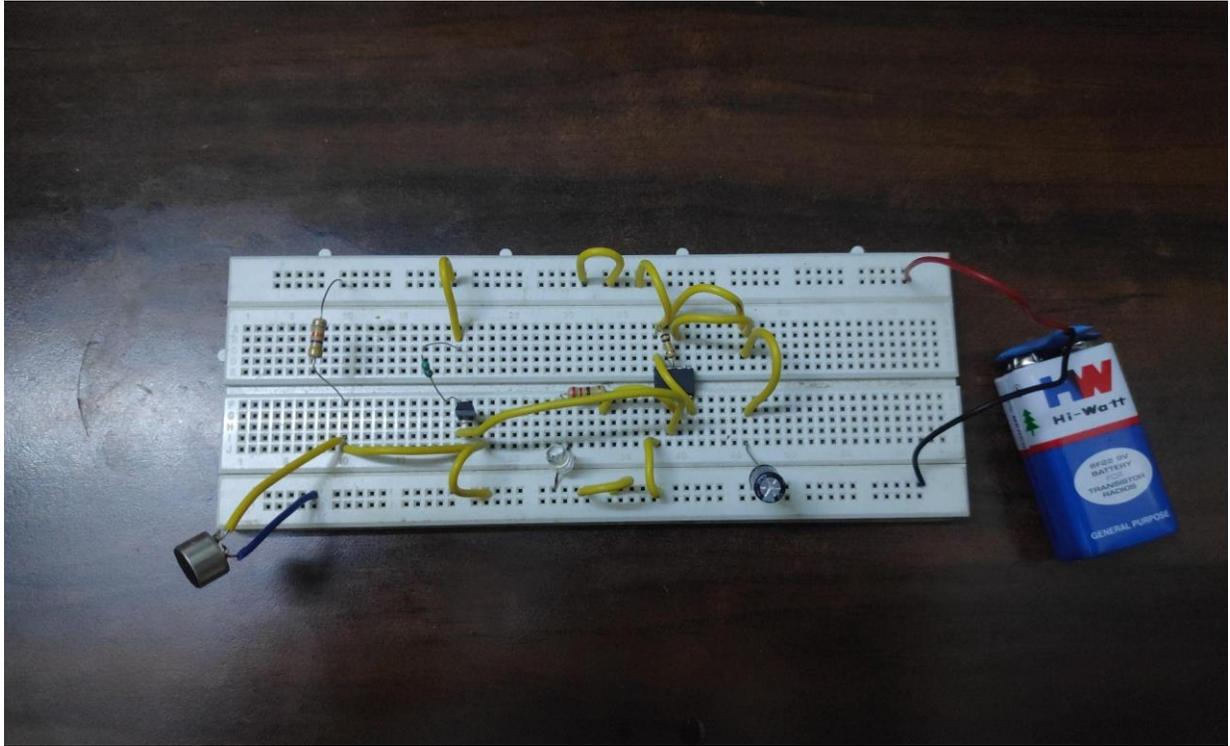


# CIRCUIT DIAGRAM



COMPONENTS	PARAMETERS
Condenser Mic	
IC	555 Timer
Resistors	220,1K,47K,100K Ohm
Transistor	BC547
Capacitor	10uf
LED	
Battery	5-9V

# EXPERIMENTAL SETUP



## WORKING OF THE CIRCUIT

This circuit uses a sound-activated sensor as an input to detect the clap sound & generates the output by processing the input into the circuit. Once clap sound is provided to the Mic, then it gets Electrical Energy & turns ON LED. By changing the capacitor value, the activated LED timer can be modified because it is connected through a 555 timer. The main function of this is to generate a signal.

The input of this circuit is clap or even any sound having the same pitch of clap sound. So this is also called a sound-activated switch. This circuit mainly uses transistors as the negative terminal of electric Mic is connected directly through the transistor. This circuit doesn't use any kind of switch to control the circuit.

Once the battery is connected to the circuit then the circuit will be activated. This circuit takes the input from the clap in the sound energy form. This circuit can be changed by employing a relay-like switch to control the circuit. Once the sound input is given to the circuit by clapping, then the sound signals can be changed to process them to the IC that generates the signal toward the light-emitting diode to activate the LED.



## **ADVANTAGES**

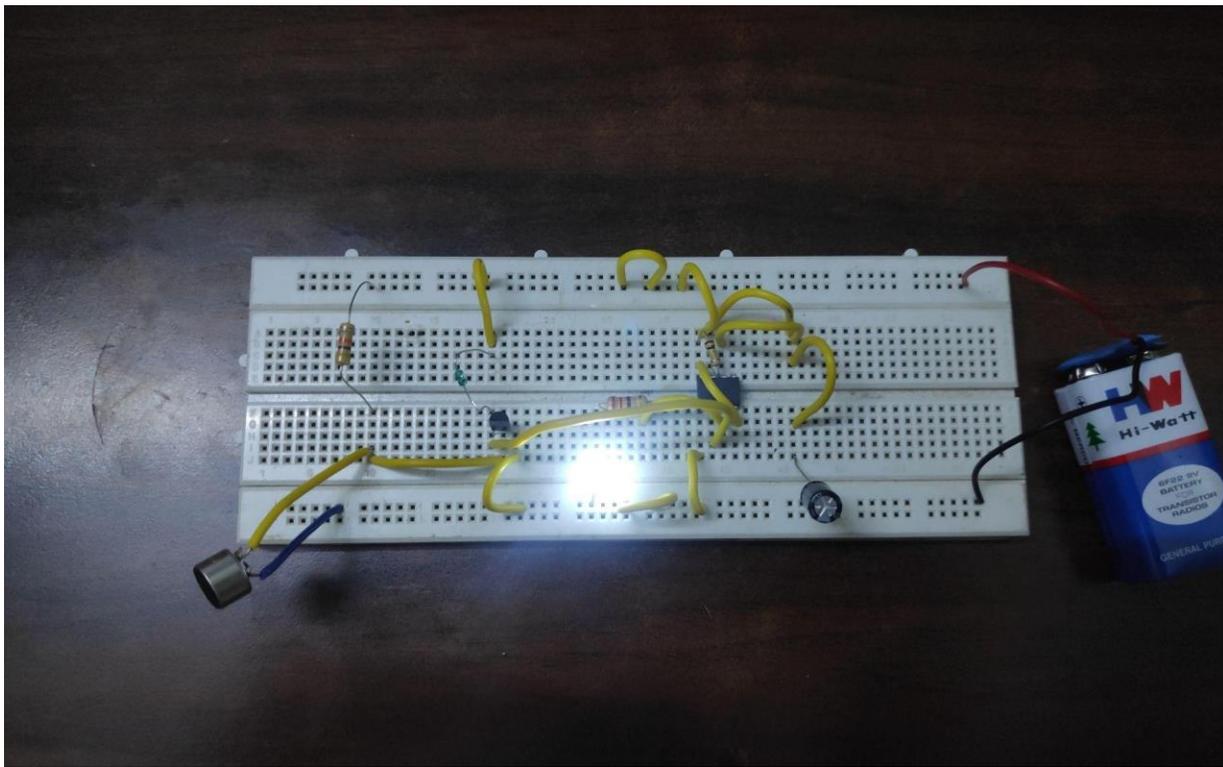
- The main benefit of a clap switch is, we can control any electric load like light, a fan from any place in the room by clapping our hands.
- Energy-Efficient System
- Less Cost
- Circuit is Reliable
- High Accuracy
- Man Power is not Required

## **DISADVANTAGES**

- The main drawback is that it is usually awkward to have to clap one's hands to control the load
- It normally looks simple in most cases to utilize a normal light switch.
- Unnecessary disturbances may occur while operating in buildings.

## RESULT

We constructed the circuit as per circuit diagram .  
And we verified the clap switch circuit.  
i.e when sound occurs near by the circuit the led in  
the circuit glows.



## CONCLUSION

The clap switch circuit activated switching device function properly by responding to hand clap at about three to four meter away and finger tap sound at very close range, since both are low frequency sounds that produce the same pulse wave features. The resulting device is realizable, has good reliability and it is relatively inexpensive. This circuit is very useful in the field of electronic circuits. By using some modification its area of application can be extended in various fields.



## **REFERENCES**

- [https:// www.electronicshub.org/clap-switch-circuit-for-devices/](https://www.electronicshub.org/clap-switch-circuit-for-devices/)
- [https:// circuitdigest.com/electronic-circuits/clap-switch-project](https://circuitdigest.com/electronic-circuits/clap-switch-project)
- [https:// www.elprocus.com/what-is-a-clap-switch-circuit-diagram-its-working/](https://www.elprocus.com/what-is-a-clap-switch-circuit-diagram-its-working/)
- [https:// www.watelectronics.com/clap-switch/](https://www.watelectronics.com/clap-switch/)

