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Higher Institute of Engineering & Technology
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وزارة التعليم العالي
المعهد العالي للهندسة والتكنولوجيا بكفر الشيخ
قسم الهندسة الكهربية

Telecommunications Trainer Kit

OVER POWER

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Superleaded by

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Content

Introduction

Welcome to our telecommunications trainer kit, your gateway to understanding the intricate world of modern communication systems. Designed to offer hands-on learning experiences, this kit provides a comprehensive platform for exploring the principles, technologies, and practices shaping today's telecommunications industry. From signal modulation to network protocols, embark on a journey of discovery and mastery with our versatile trainer kit.

This comprehensive kit provides everything aspiring telecom enthusiasts need to delve into the principles and practices of modern communication systems. From understanding basic concepts to advanced protocol analysis, our trainer kit offers a practical approach to mastering the intricacies of telecommunication technology. Whether you're a student, educator, or industry professional, our kit is tailored to enhance your understanding and proficiency in this dynamic field. Unlock the potential of telecommunications with our intuitive and versatile trainer kit.

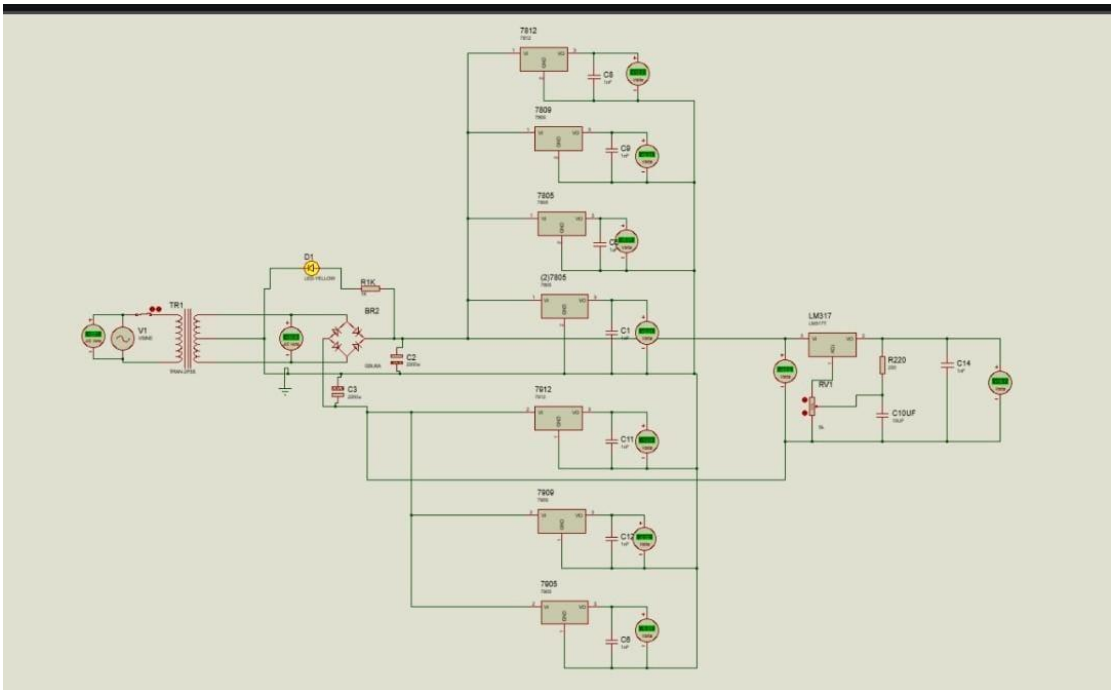
1) POWER SUPPLY

A brief for circuit :-

convert electric current from a source to the correct voltage, current, and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters . Our power supply contains …….

- Fixed positive voltage (+12,+9,+5)
- Fixed negative voltage (-12,-9,-5)

Circuit drawing :-

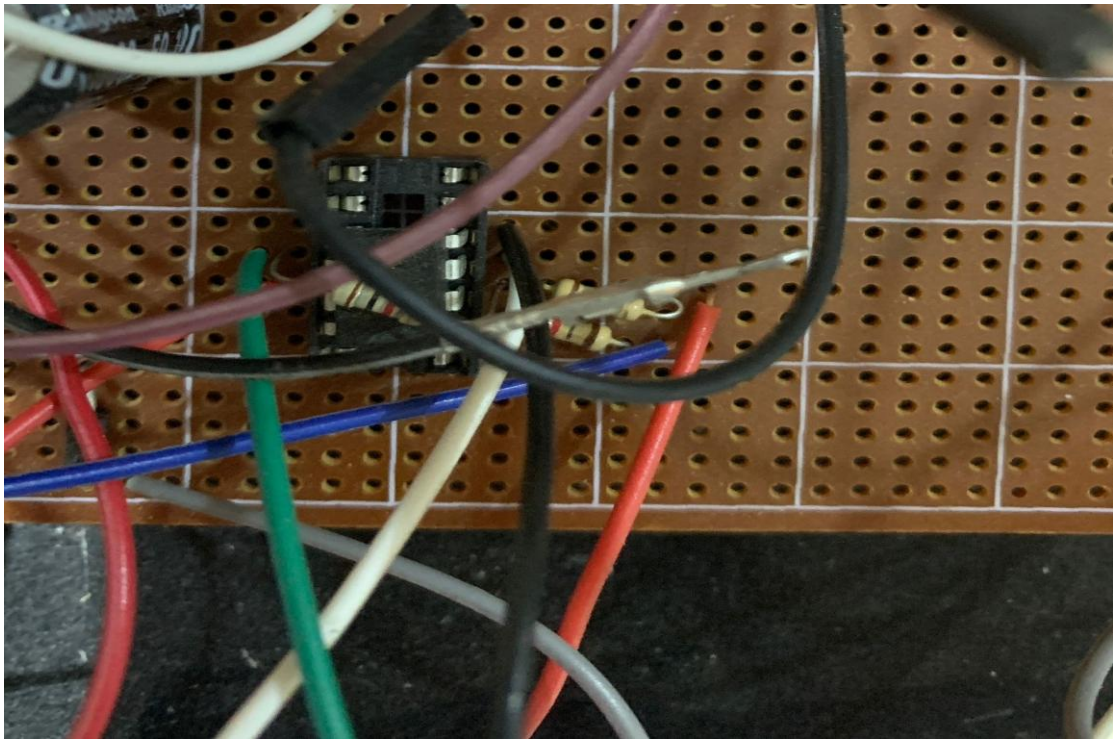


2) Adder

A brief for circuit :-

An adder is a digital circuit that performs arithmetic operations, specifically addition.

Circuit on pcb :-



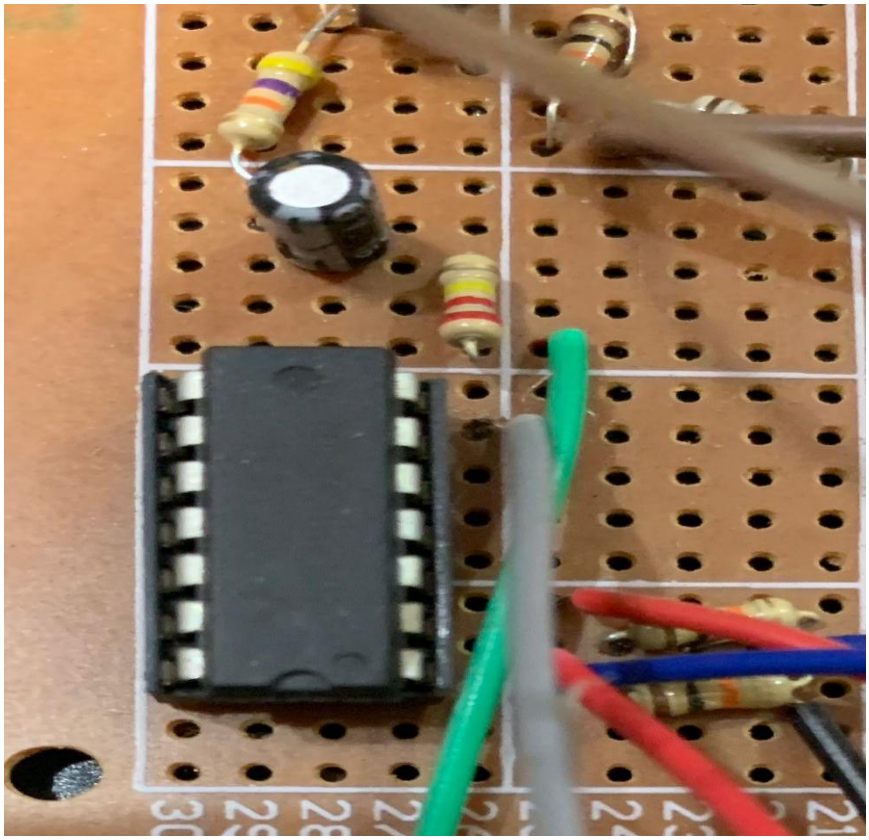
Output waveform :-

3) EXOR

A brief for circuit :-

The XOR gate, or exclusive OR gate, is a fundamental component in digital electronics, known for outputting '1' when an odd number of inputs are '1'. It's essential in error detection, data communication, and arithmetic operations within computational devices.

Circuit on pcb :-



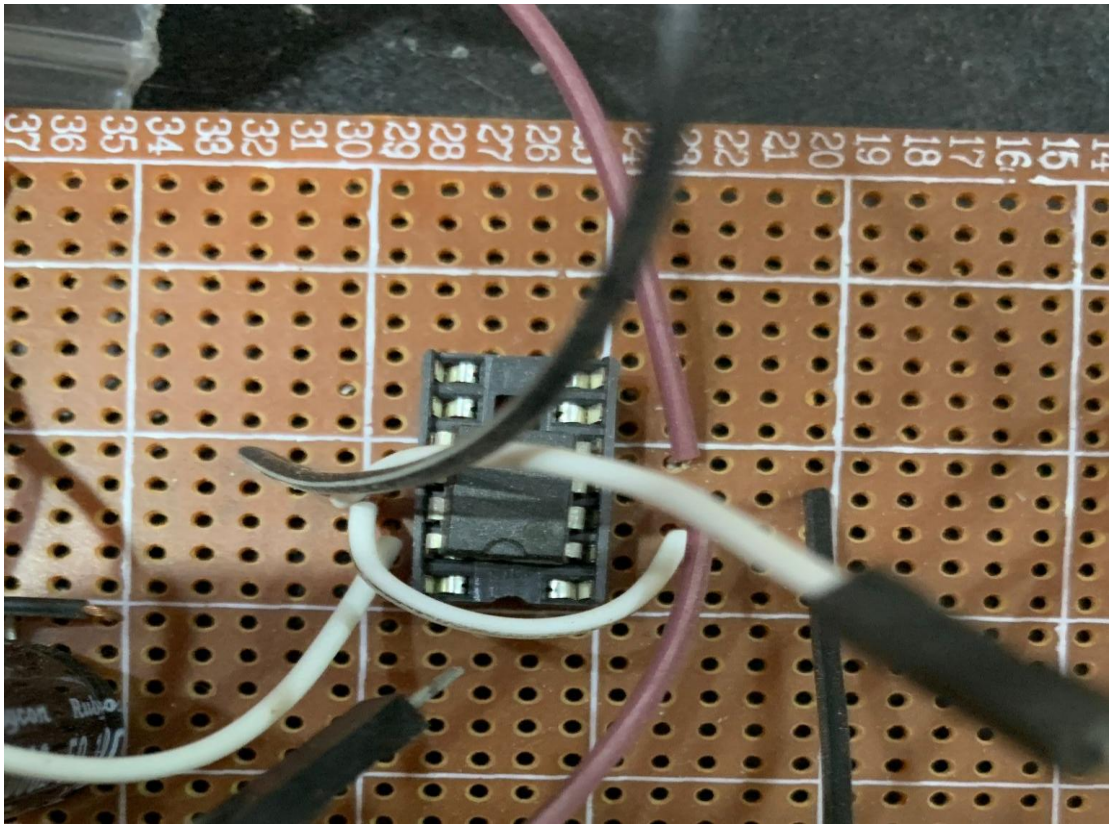
Output waveform :-

4) Buffer

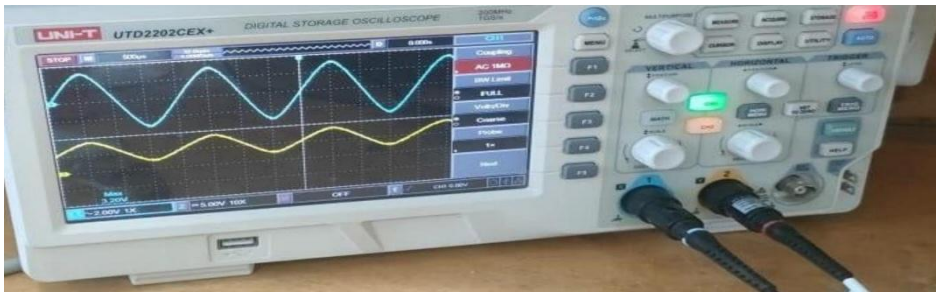
A brief for circuit :-

Buffers prevent too much current being taken from the source of a signal, and are used to isolate one section of a circuit from the next.

Circuit on pcb :-



Output waveform :-

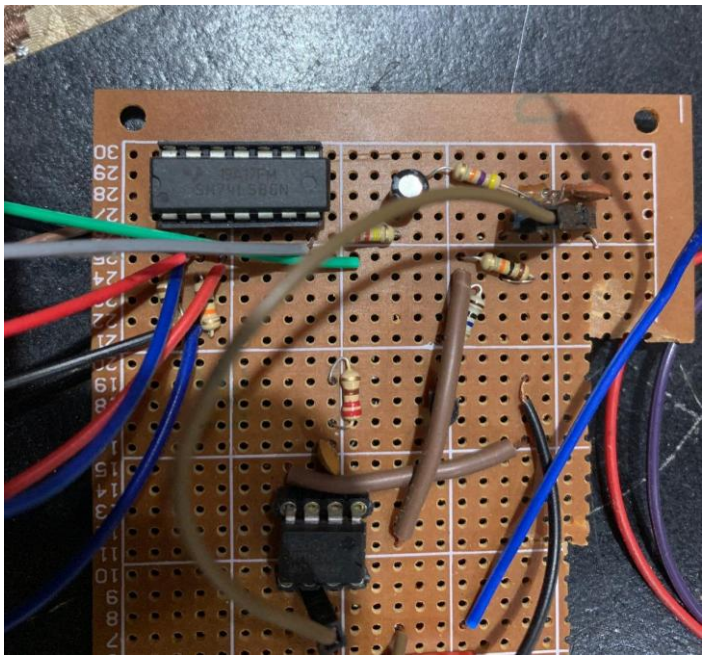


5) Noise generator

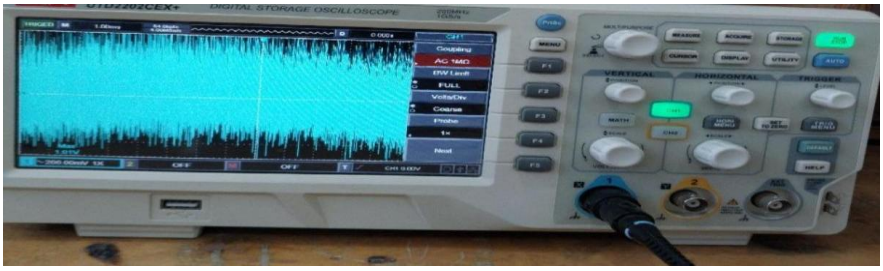
A brief for circuit :-

A noise generator is a circuit that produces electrical noise (i.e., a random signal). Noise generators are used to test signals for measuring noise figure, frequency response, and other parameters

Circuit on pcb :-



Output waveform :-

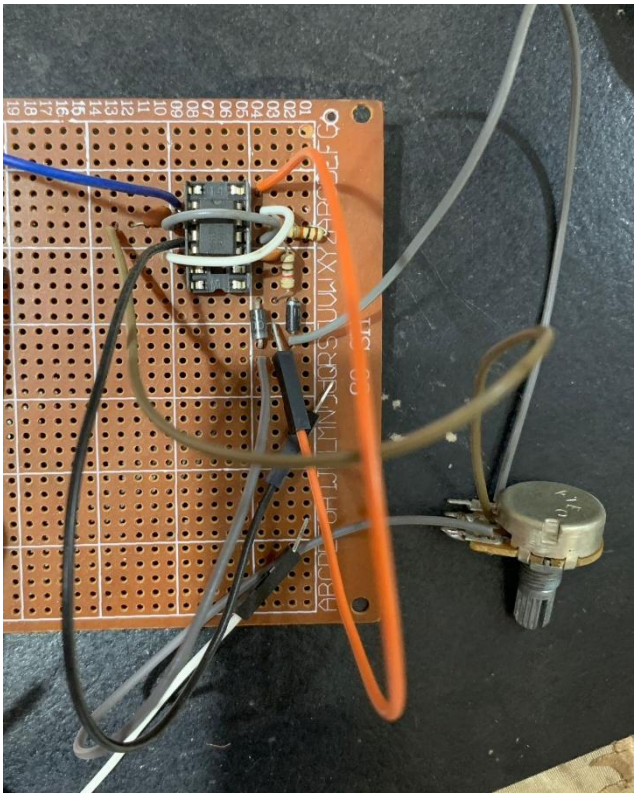


6) Twin Pulse generator

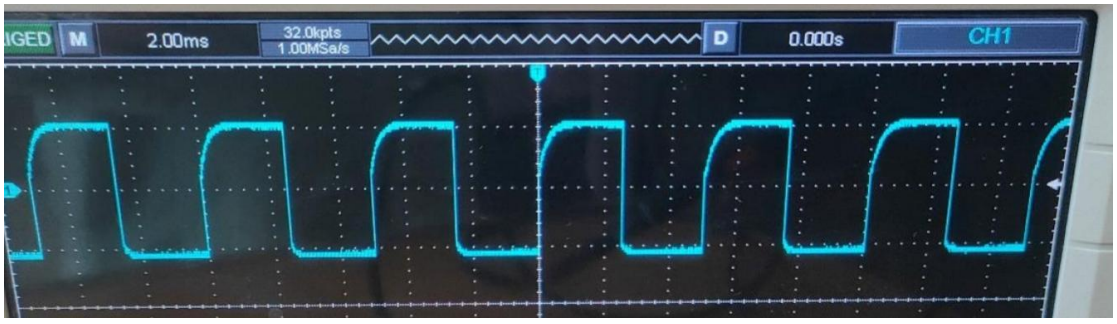
A brief for circuit :-

Controls the width and breadth of the wave.

Circuit on pcb :-



Output waveform :-

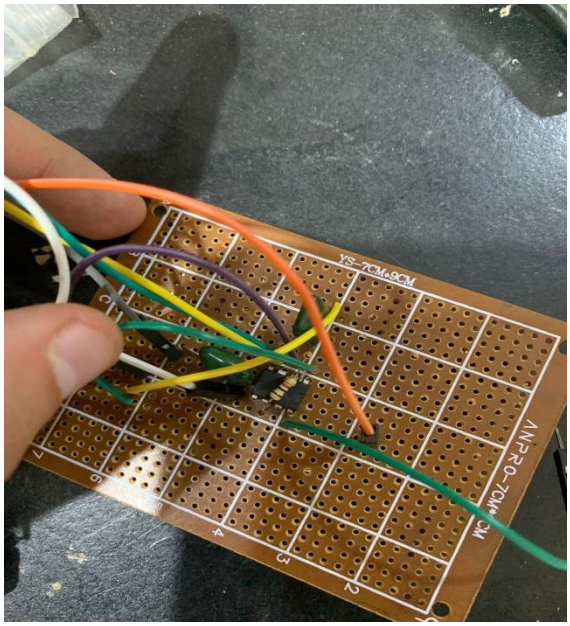


7) VCO

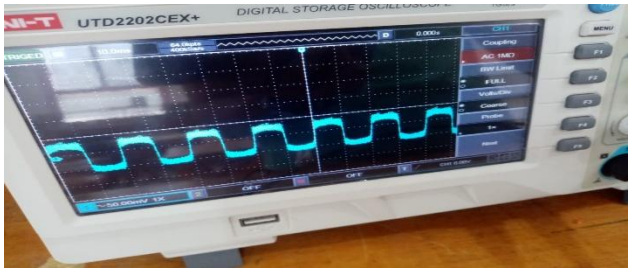
A brief for circuit :-

It is a group of oscillators that control the voltage and are classified based on it In the form of the resulting wave (harmonic oscillators (linear) - oscillatorsTo relax (saw teeth)

Circuit on pcb :-



Output waveform :-

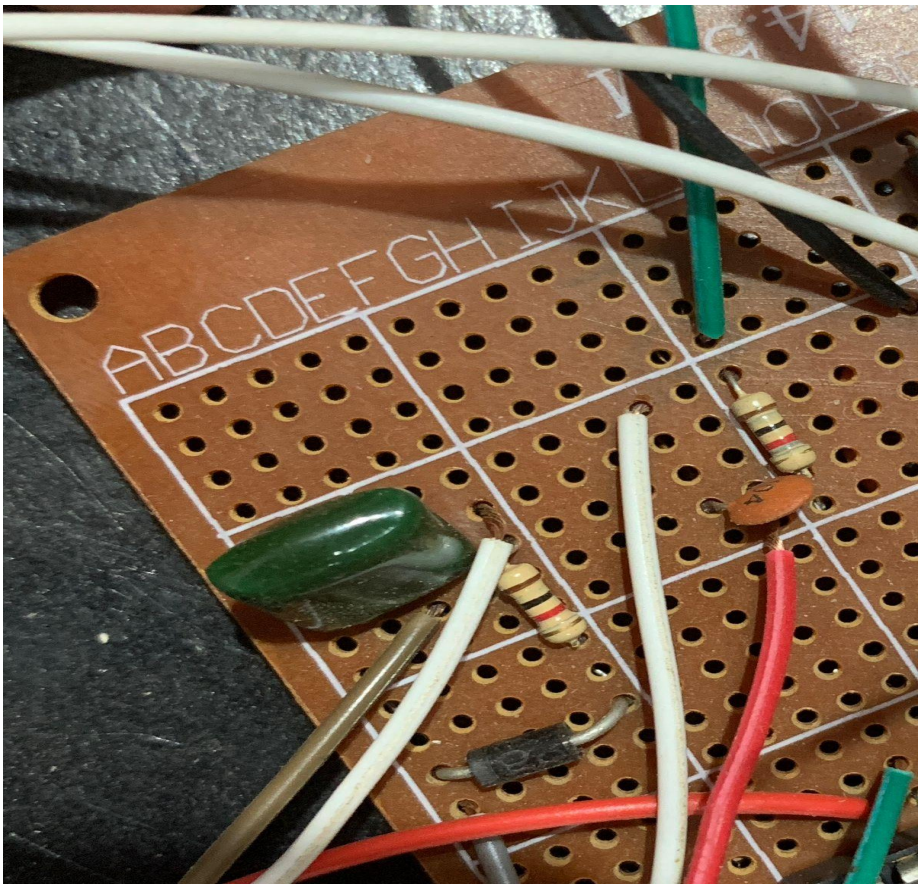


8) RC LPF

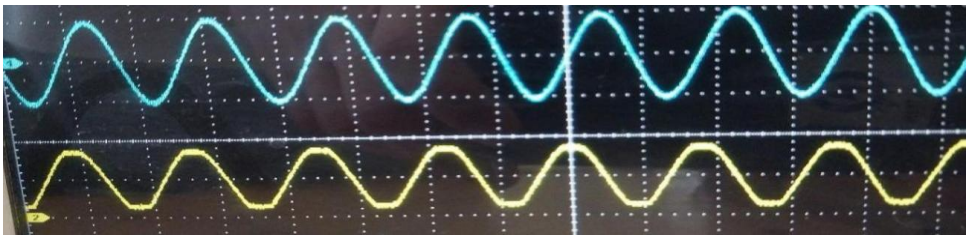
A brief for circuit :-

An RC low-pass filter circuit allows low-frequency signals to pass through while attenuating high-frequency signals. It consists of a resistor (R) and a capacitor (C) connected in series.

Circuit on pcb :-



Output waveform :-

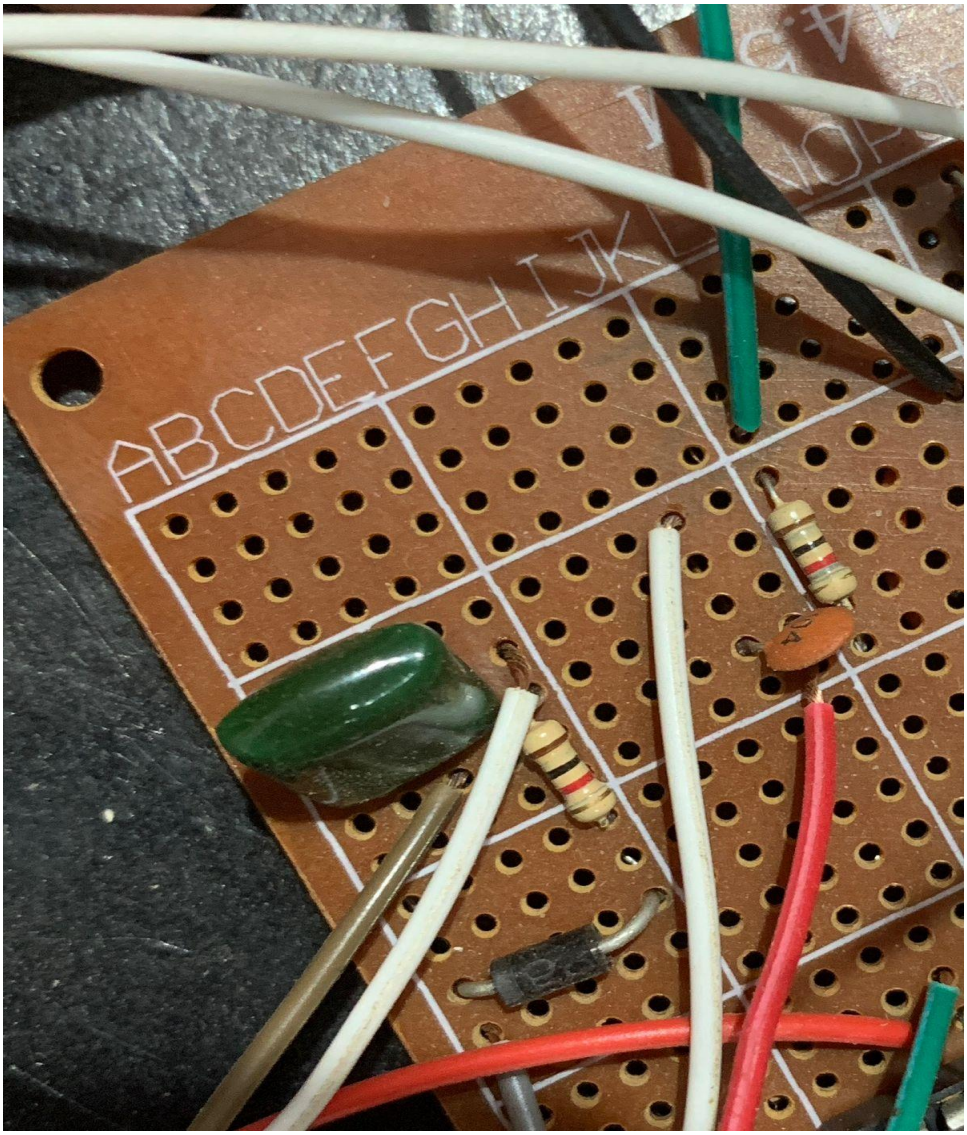


9)Diode & RC LPF

A brief for circuit :-

RC circuits can be used to filter a signal by blocking certain frequencies and passing others.

Circuit on pcb :-

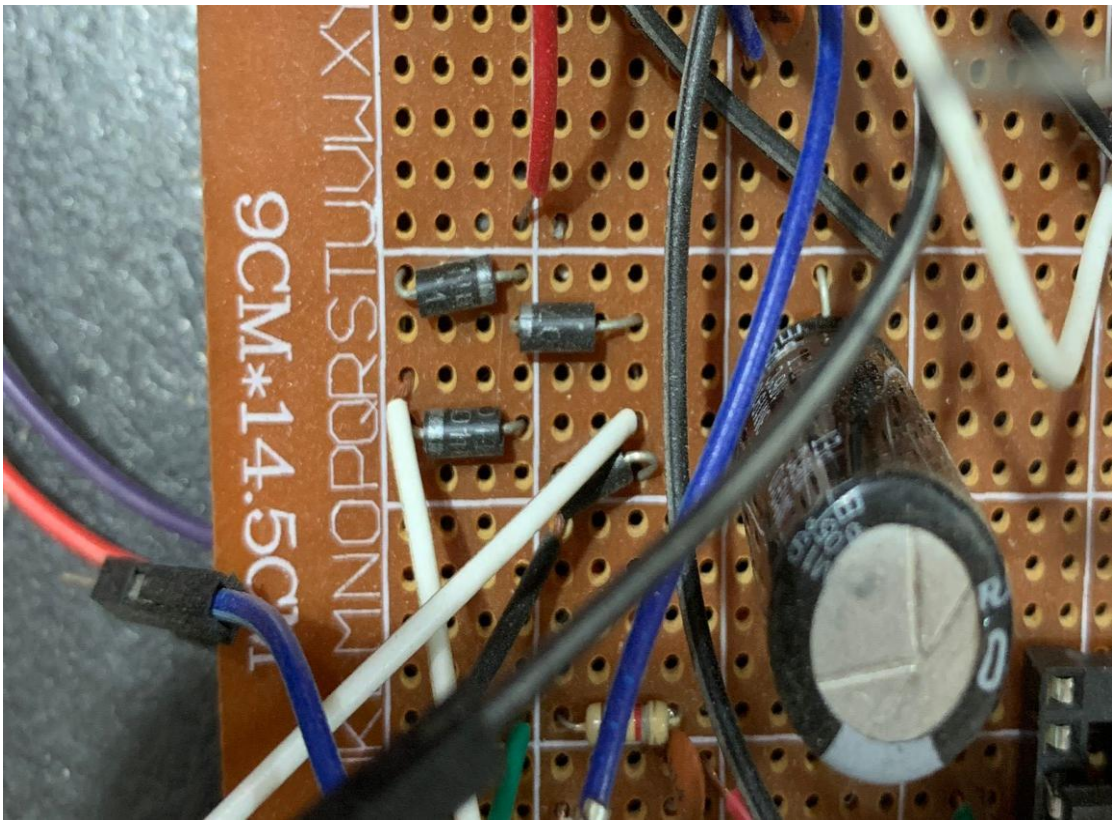


10)RECTIFIRE

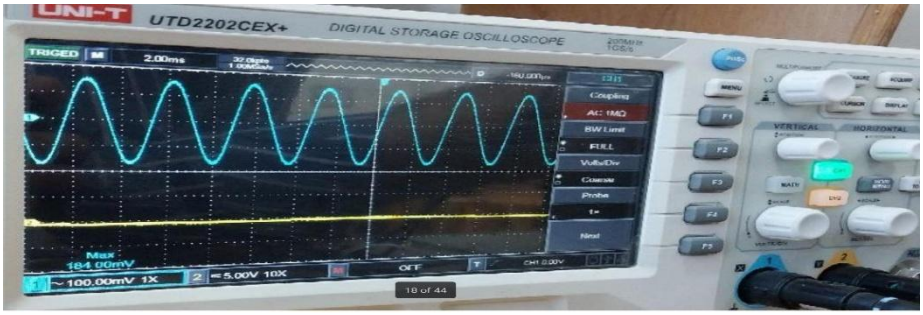
A brief for circuit :-

convert AC currents to DC currents and thus provide a steady voltage output for electrical devices and appliances. By using rectifiers

Circuit on pcb :-



Output waveform :-

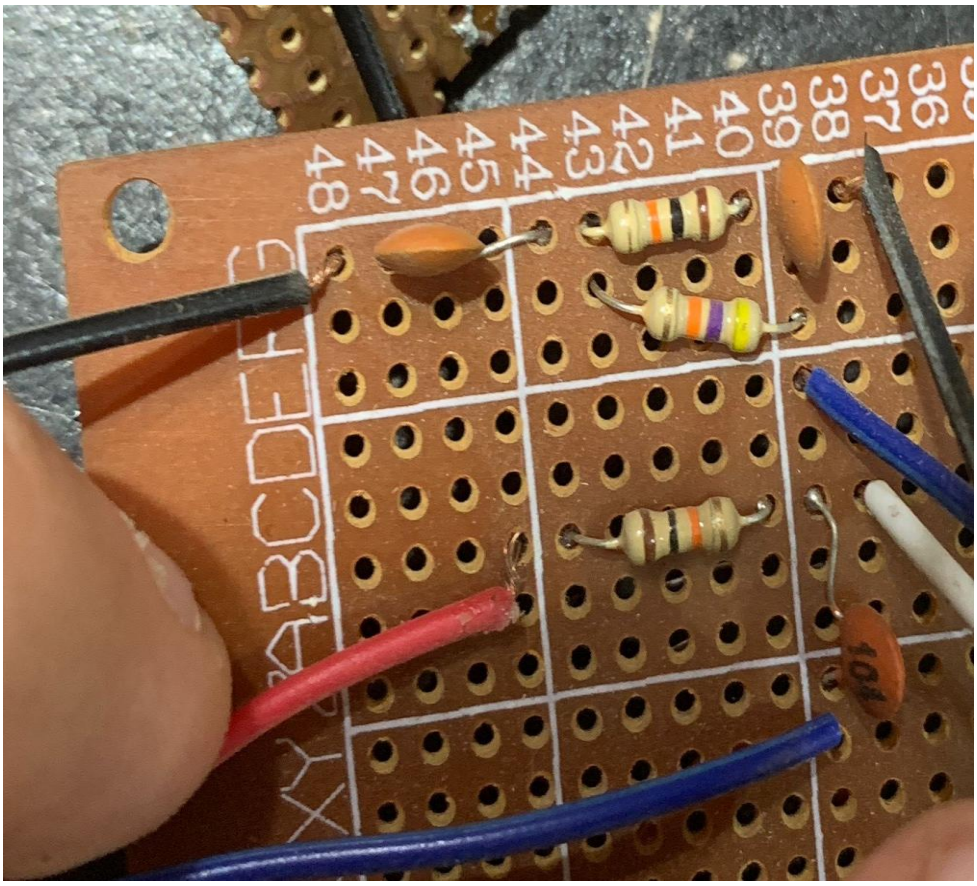


11)Channel Module

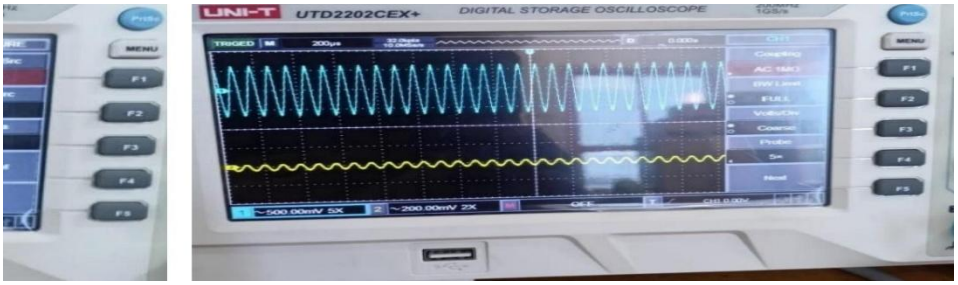
A brief for circuit :-

board which can be used to control high voltage, high current load such as motor, lamps and AC load.

Circuit on pcb :



Output waveform :-

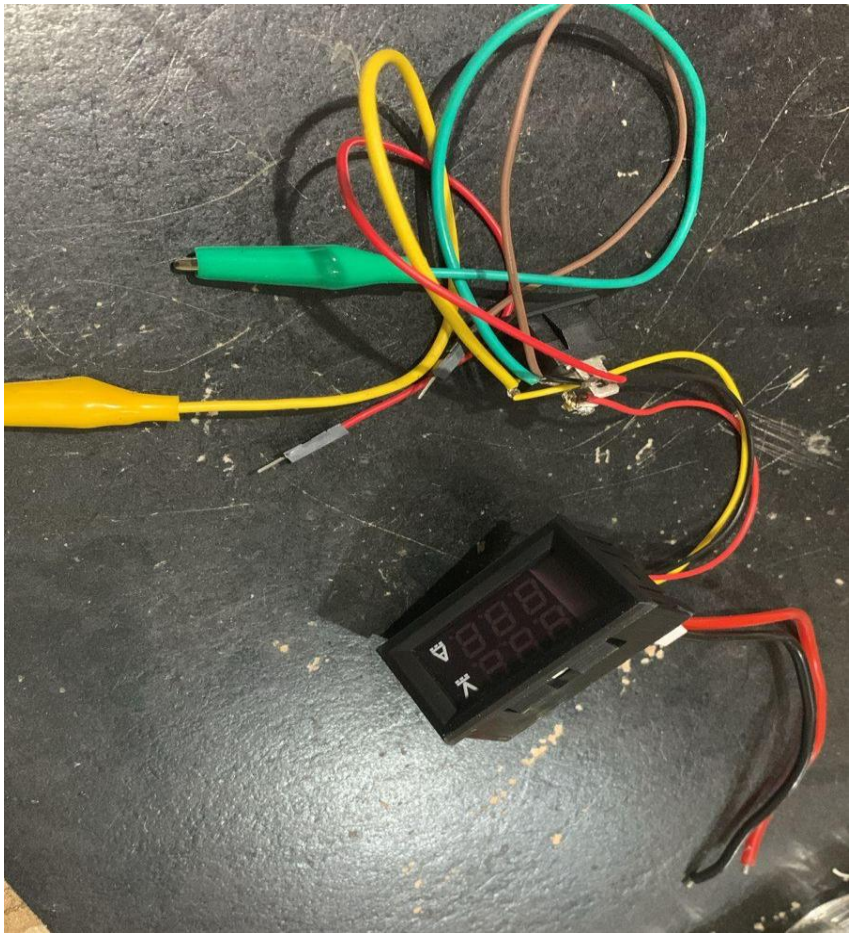


12)Voltmeter & Ammeter

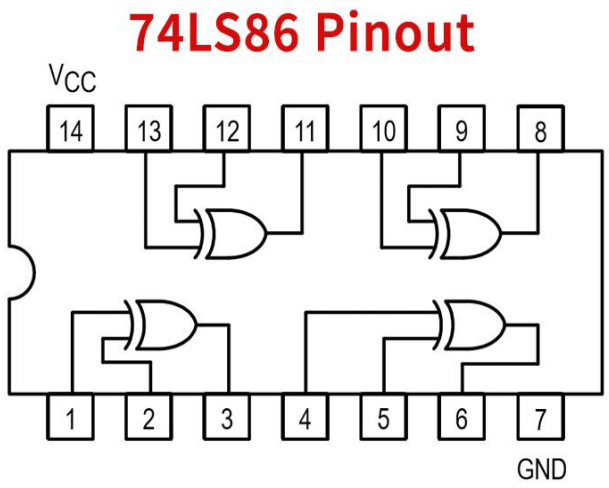
A brief for circuit :-

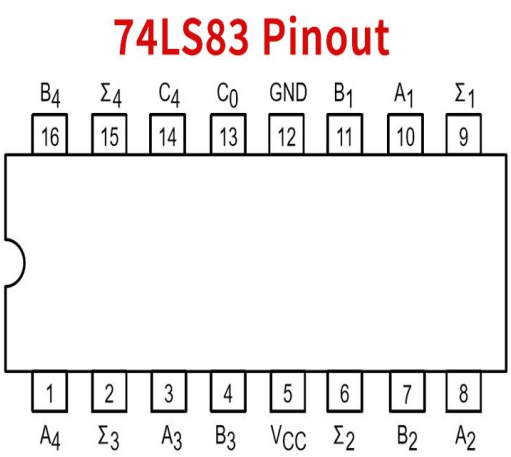
ammeter comes in handy for measuring the flow of current whereas the voltmeter comes in handy for measuring the voltage or emf across two points in an electric circuit.

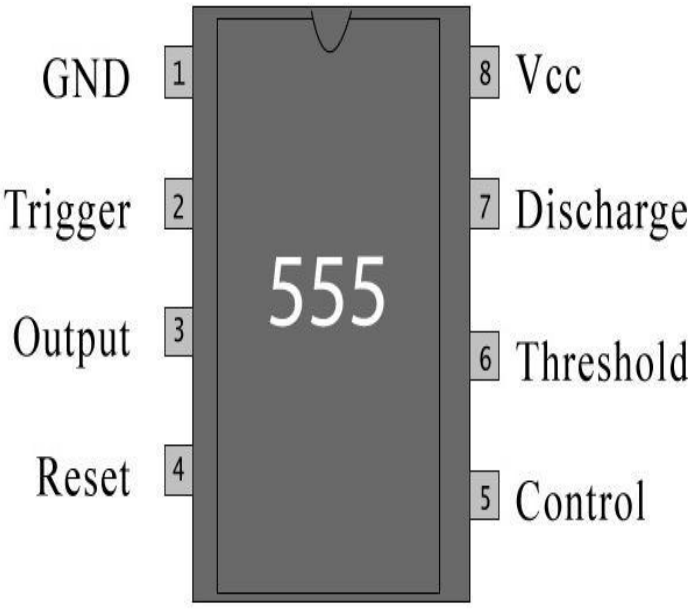
Circuit :

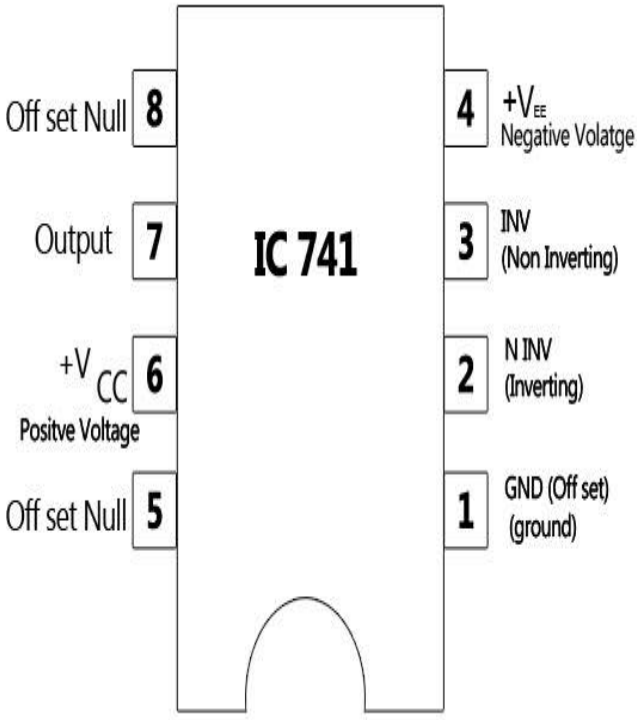


13)ICs datasheet









thank you