

Lab Report: Full-Wave Rectifier

Objective

To construct a full-wave rectifier circuit using diodes and observe the rectification of an AC input into a pulsating DC output.

Date

May 26, 2025

Group Members

[Your Name(s) Here]

Materials Used

- Step-down transformer (230V to 12V)
- 4 x Diodes (1N4007)
- Resistor (1kOhm)
- Breadboard and connecting wires
- Oscilloscope or Multimeter
- Capacitor (optional for filtering)
- Power supply

Procedure

1. Connected the diodes in a bridge configuration on a breadboard.
2. Connected the secondary of the transformer to the AC input of the bridge.
3. Connected the load resistor across the DC output of the bridge.
4. Powered on the transformer and observed the input and output waveforms.
5. Captured images of the circuit and oscilloscope readings for analysis.

Discussion

The experiment successfully demonstrated the working of a full-wave rectifier. The AC signal was converted into a pulsating DC signal, as seen in the oscilloscope images. If a capacitor was added across the output, the waveform became smoother, indicating reduced ripple voltage.

Conclusion

A full-wave rectifier circuit was built and tested. The rectifier was able to convert the AC input into a DC output effectively, as demonstrated through the oscilloscope readings and captured images.

References

- Basic Electronics by [Author]
- Lab Manual [Your Institution]

Image 1: Breadboard Setup of Full-Wave Rectifier

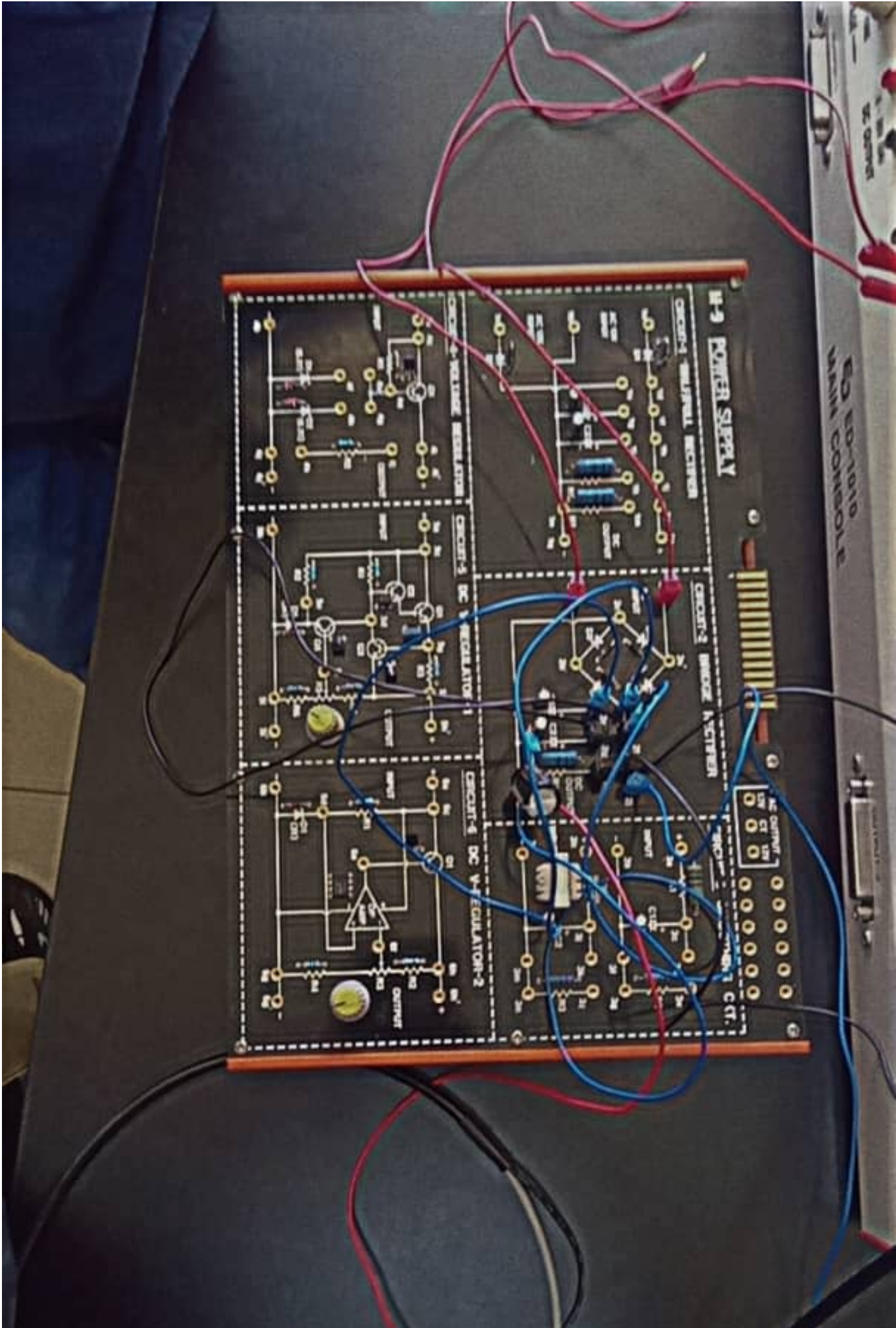


Image 2: AC Input Waveform on Oscilloscope

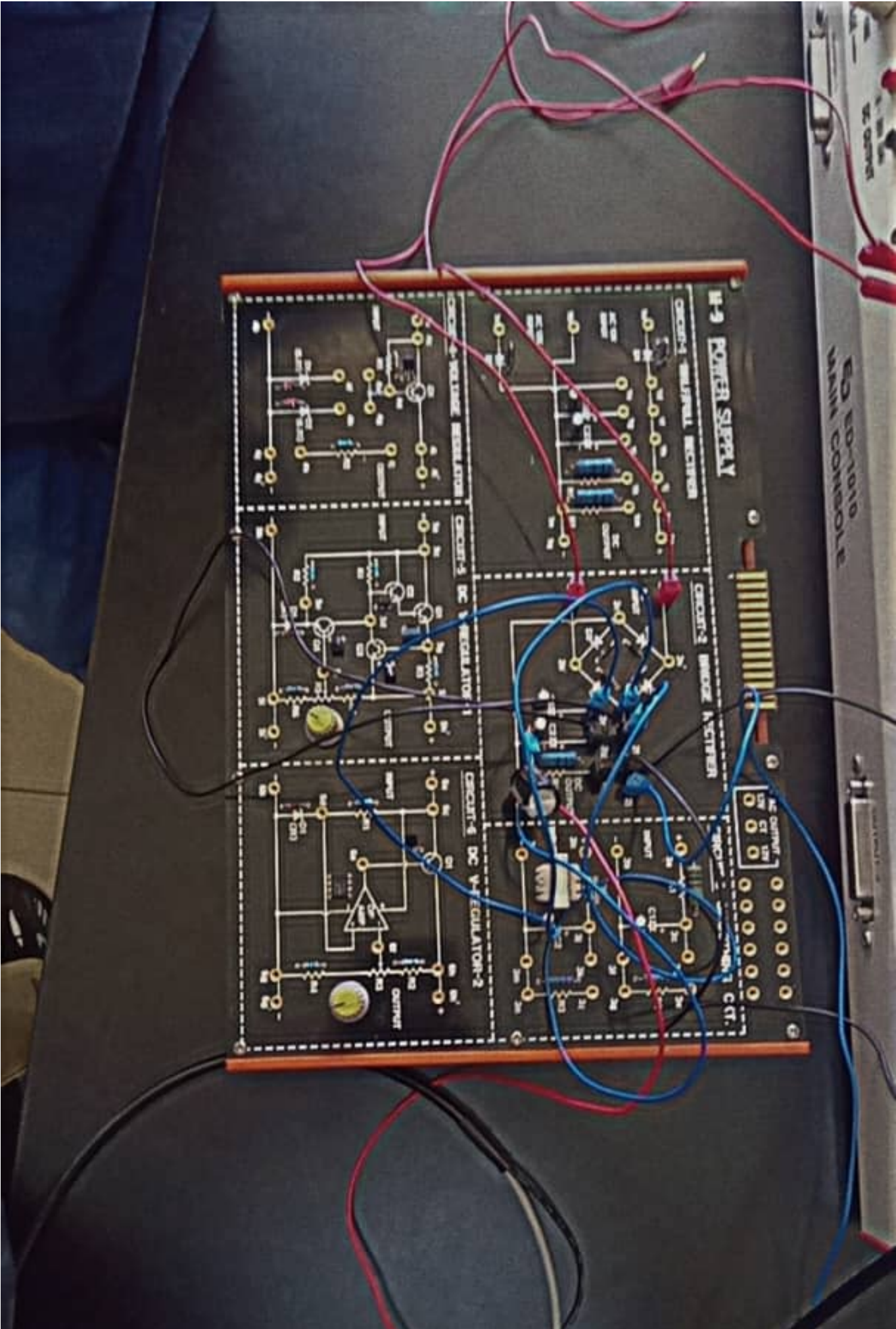


Image 3: Rectified Output Waveform

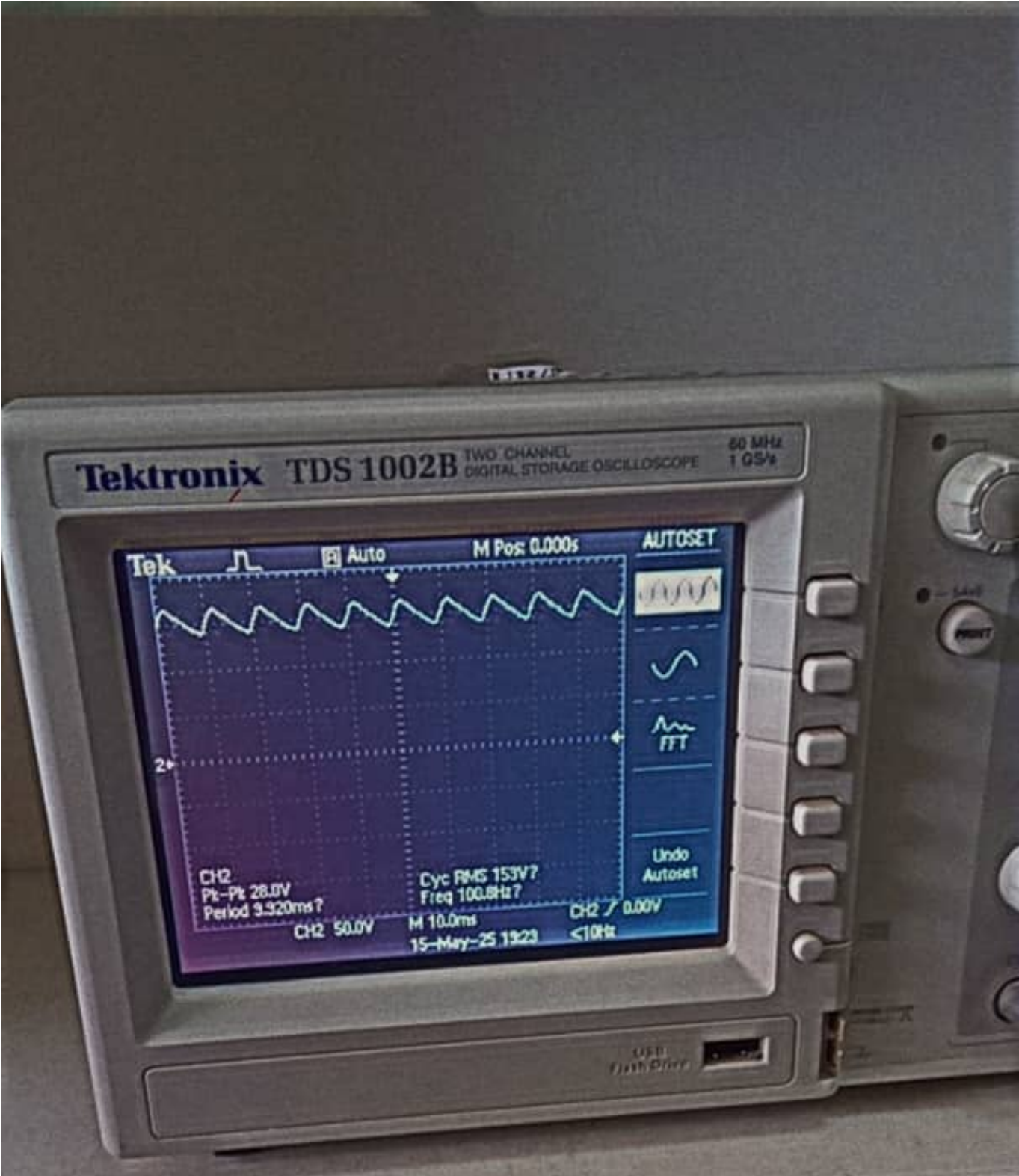


Image 4: Filtered Output (if capacitor used)

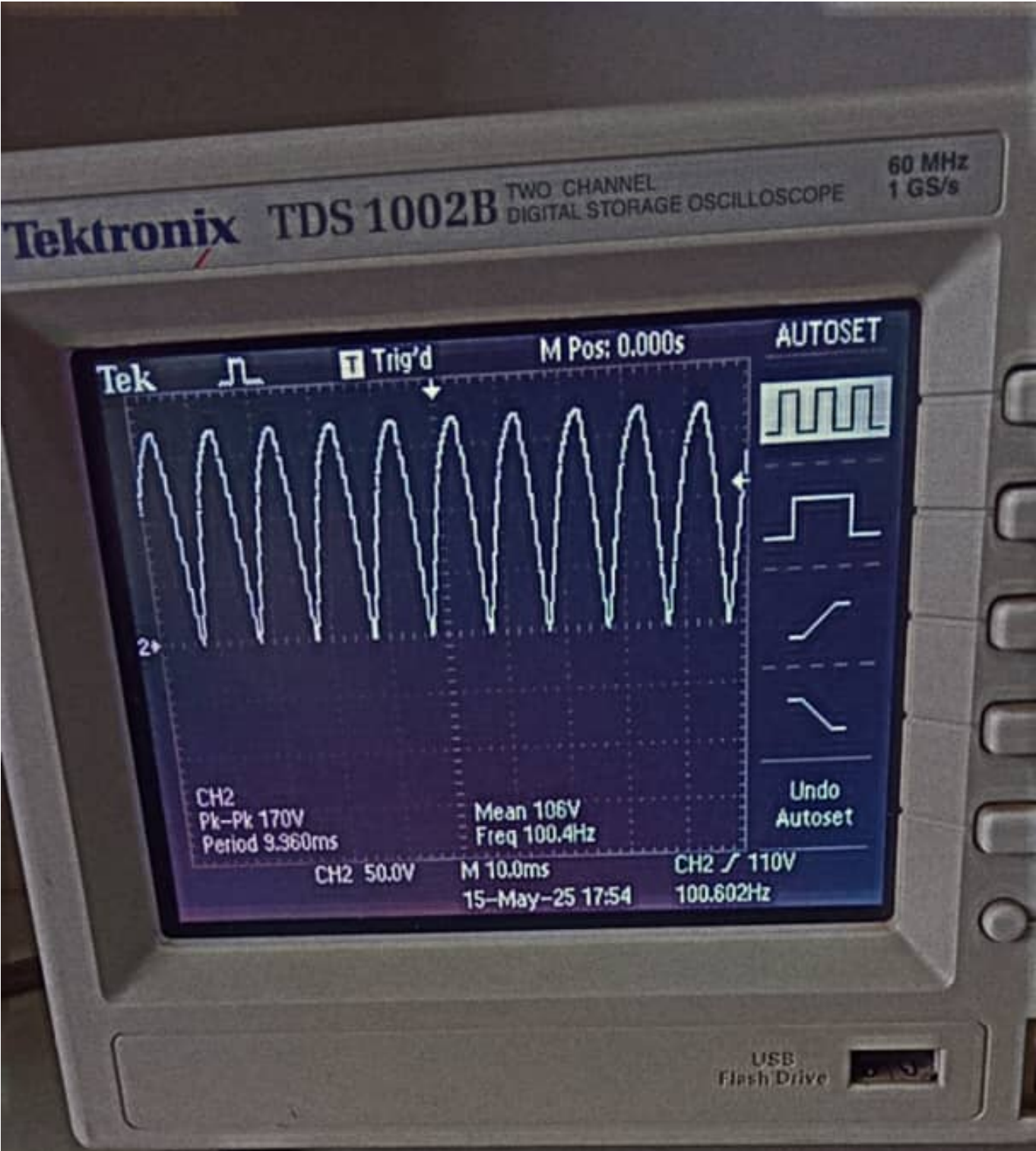


Image 5: Additional Circuit Observation 1

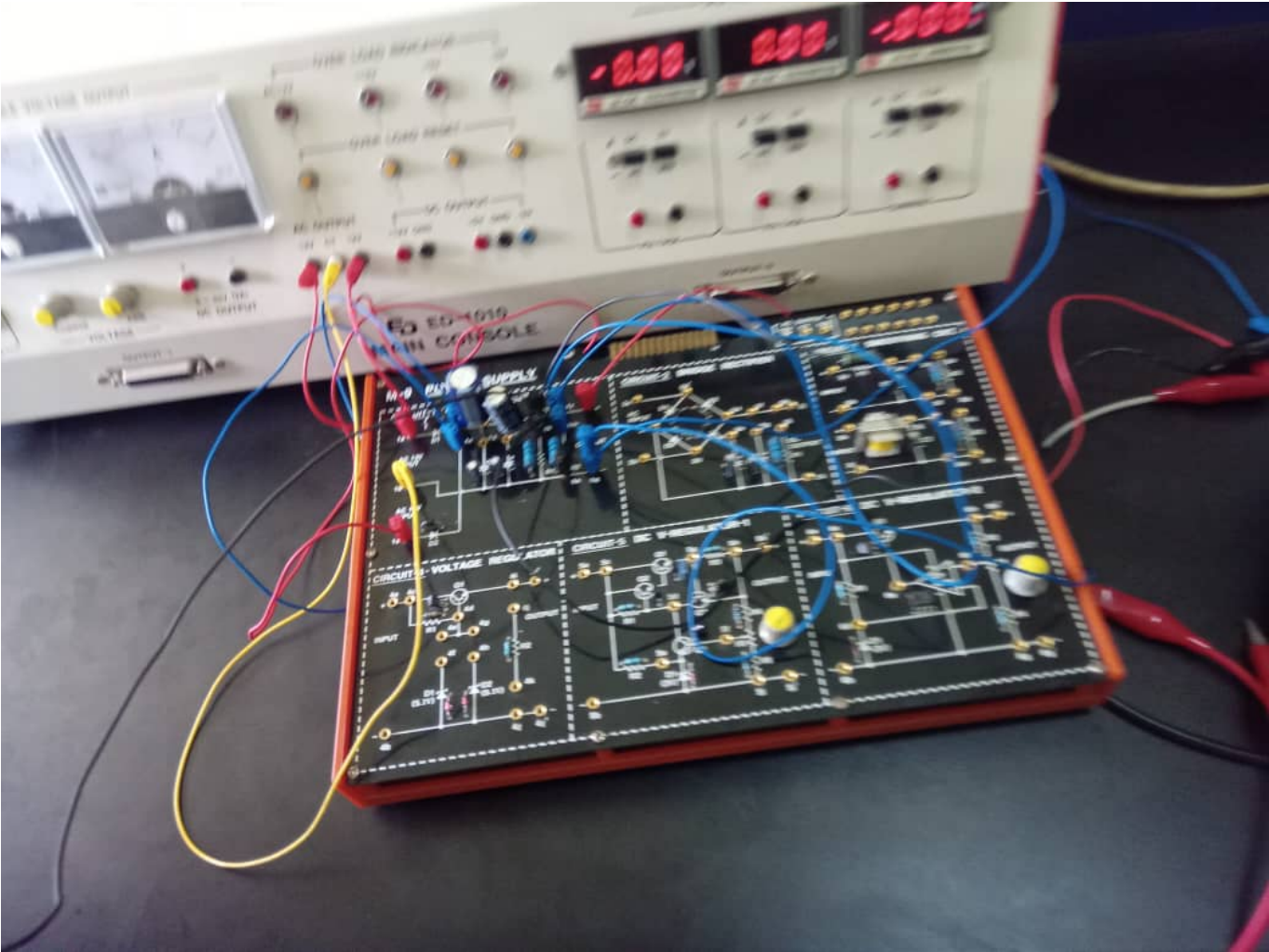


Image 6: Additional Circuit Observation 2

