Lab 10

LTSpice Analysis of Active Filters

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1 Introduction

Operational amplifiers (op-amps) have served as essential components in electronic circuit design, particularly in sensing and signal processing applications. This lab focused on constructing active filters with op-amps, which are critical for biomedical applications such as electrocardiogram (EKG) signal measurement. These filters were designed to amplify small signals while selectively filtering out noise, thereby enhancing signal quality by rejecting common-mode interference and removing unwanted frequency components. Through LTSpice simulations, low-pass and high-pass filter designs were examined to analyze their frequency responses, cutoff frequencies, and time-domain performance. This approach provided insights into the role of active filters in real-world signal processing, forming a foundation for practical applications in biomedical and other electronic systems.

2 Results

3 Discussion and Conclusion

4 References

[1] Dr. Iman Salama. "Lab 10 – LTSpice Analysis of Active Filters" Northeastern University. 11 November 2024.