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Author Yung Ming Tsai
Author's Email Address No Public.
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Abstract
This thesis proposed a 1-V switched-capacitor bandpass filter for wireless bidirectional microstimulator. The operation amplifier used in the filter is the switched- opamp. The advantage of the switched-opamp is that it can turn off its power during un-working cycle. The most concern of the microstimulator is the power problem. The proposed filter we proposed can solve power problems due to its 1-V operation，and using switched-OPAMP technique. The frequency region of nerve signal is 250Hz to 5KHz, therefore the frequency rang has been adopted to accomplish the design of 6th order Bessel filter.

The conventional architecture of 1-V switched-opamp has been discussed in this thesis. We found that the level-shifter is sensitive to the bias point. Furthermore, We proposed a new technology to overcome this problem. The proposed 1-V switched-opamp has the advantages of higher DC stability and AC gain as compared with conventional architecture. The proposed switched-opamp is also employed in bandpass filter.

The bandpass filter adopts the low-Q SC biquad filter architecture. By way of proper modified phase, the number of operation amplifier operating at the same time can be reduced from 6 to 3,and saving a large amount of power.

The bandpass filter has been implemented by using TSMC 0.25μm 1P5M Mix-signal process. It has sampling frequency of 125KHz, passband region from 250Hz to 5KHz, supply voltage of 1V, power consumption of 402uW, peak signal to noise ratio of 39dB and dynamic more then 100dB.
Advisory Committee Shuenn-Yuh Lee - advisor

Po-Hui Yang - advisor

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