

Improved Wireless Data Back Telemetry Using Load Shift Keying for Biomedical System

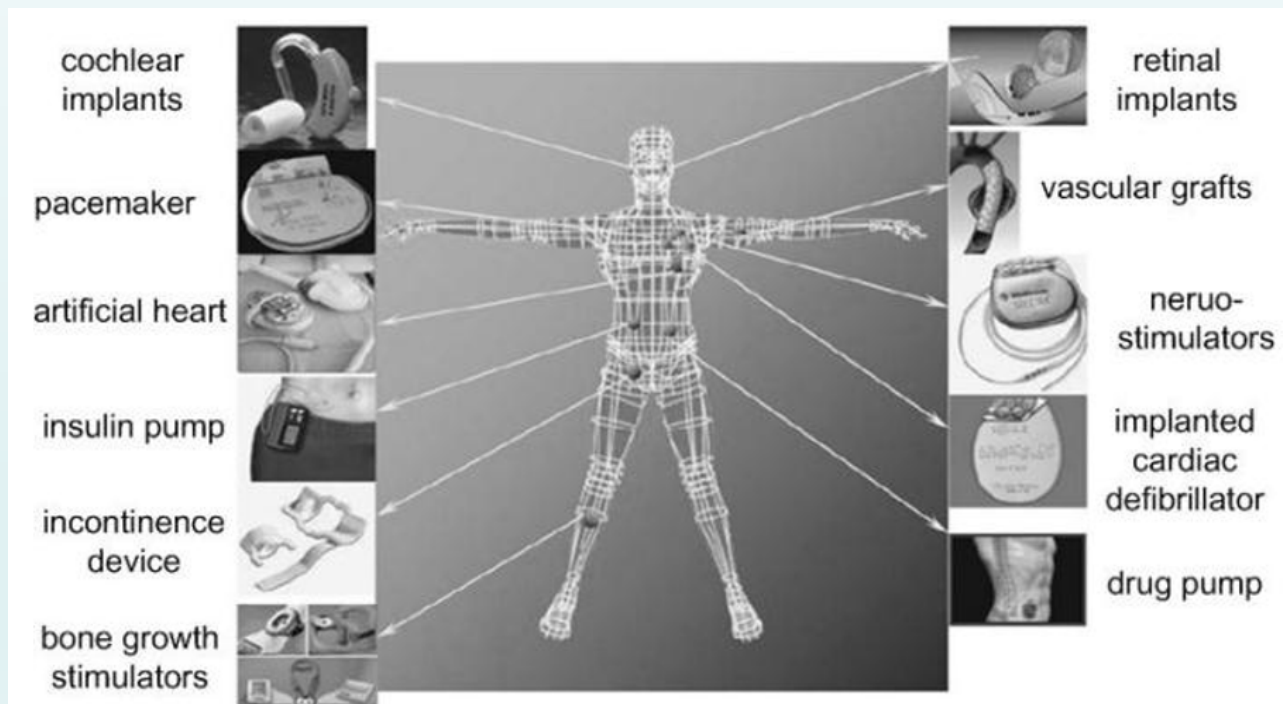
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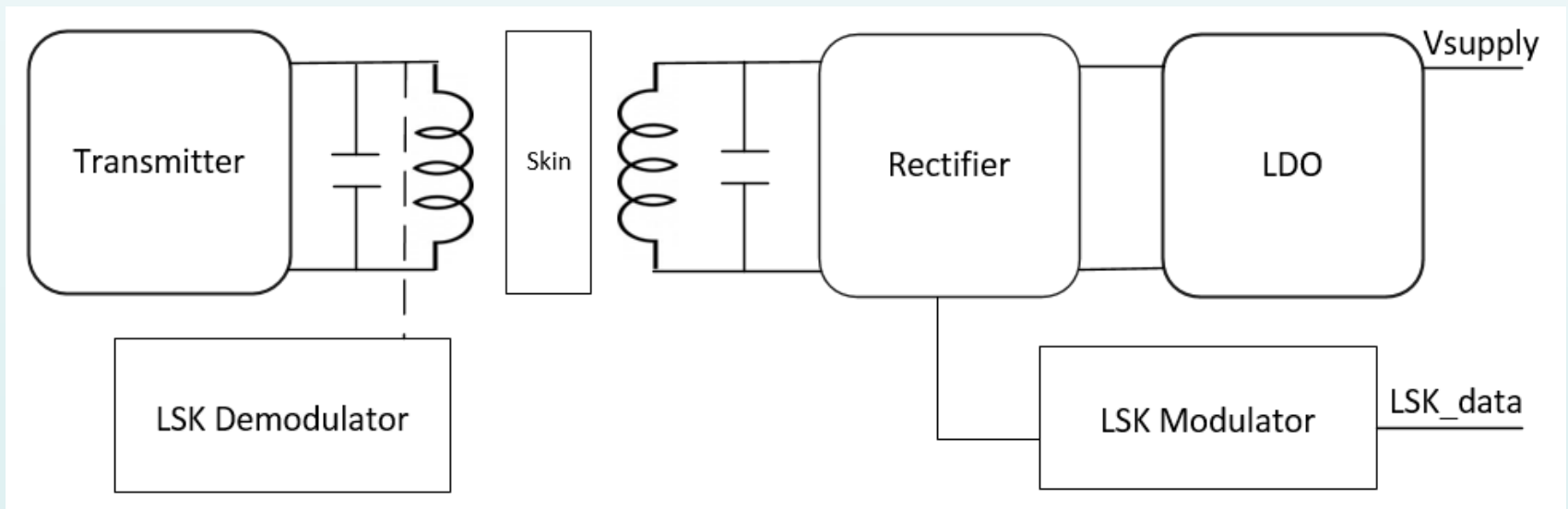
Motivation

Nowadays ,implanted biomedical devices are popular used by patients .In order to extend the life time of medical devices, power conversion efficiency becomes a important topic.

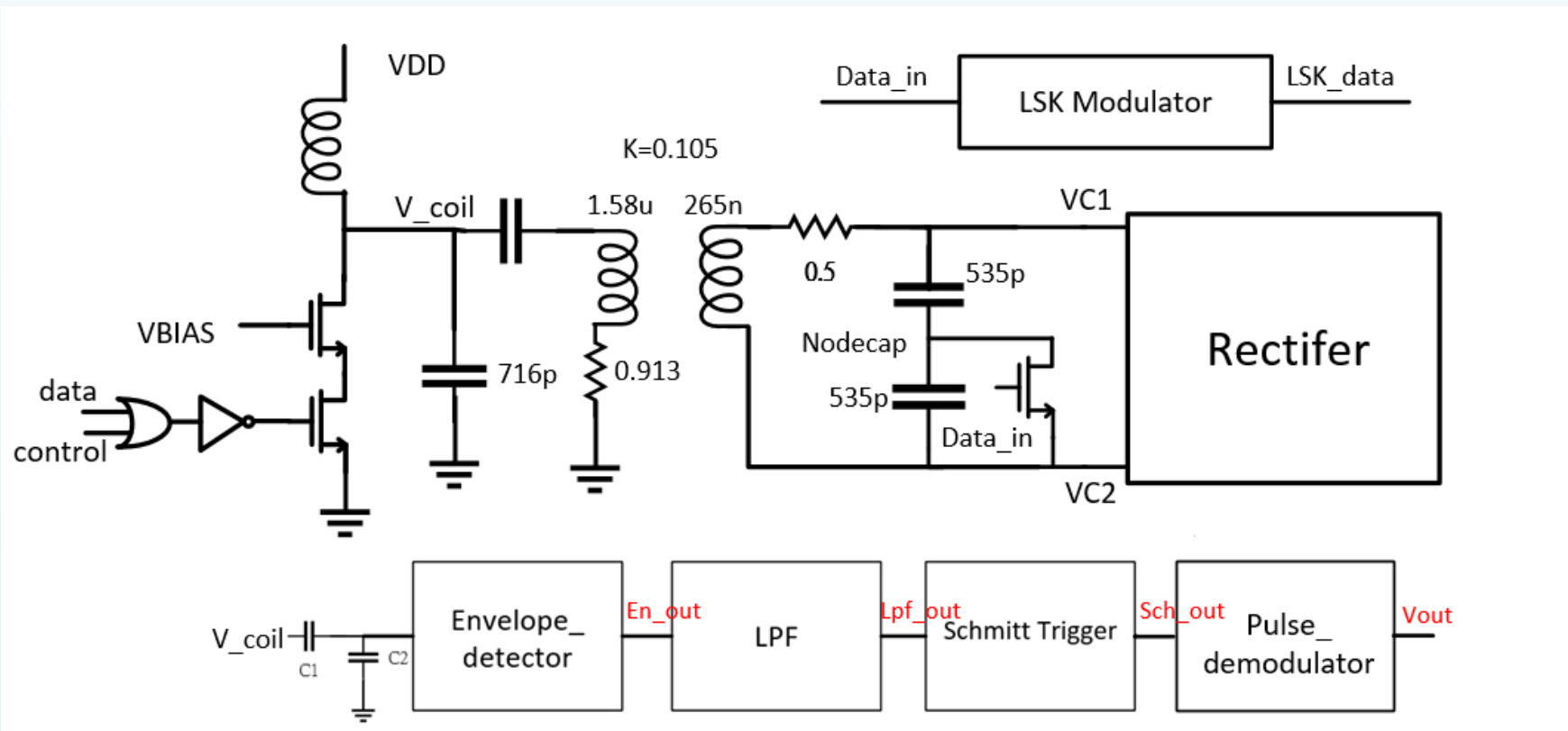


System Architecture

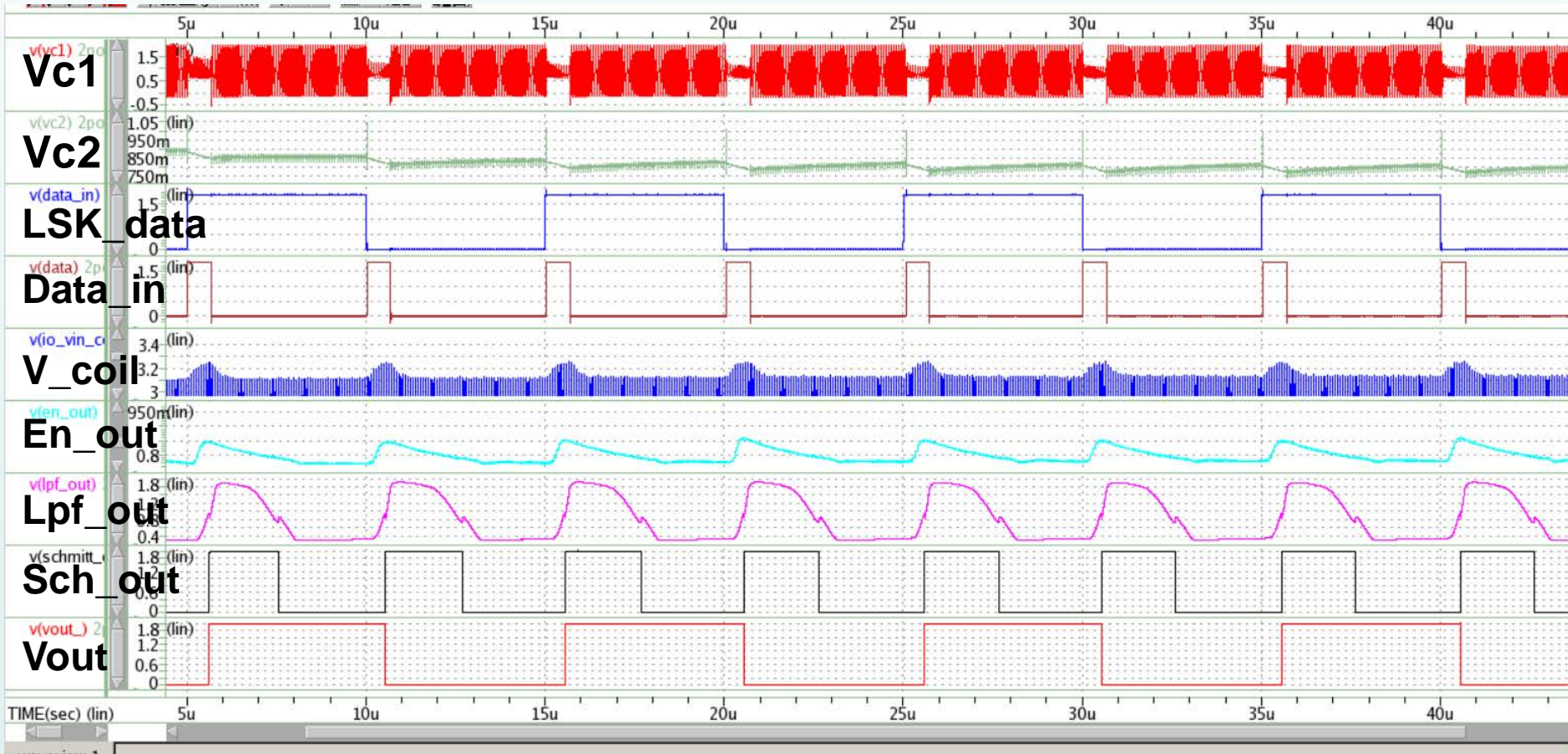
To realize wireless power system ,we use near field coils to deliver power from primary coil to secondary coil, and transfer LSK data in opposite direction. LSK modulator circuit block would modulate LSK data and then be decoded by LSK demodulator.



Circuit Schematic



Simulation Result



Conclusion and Future Work

This power system circuit is fabricated in TSMC 0.18um CMOS process .System is operated in 13.56MHz and the LSK signal data rate is 200KHz.

When the switch changes between on/off ,Vc1 changes not quite a lot, cause primary coil's node voltage only has about 40mV voltage variation. In order to reject noise and improve signal accuracy, LSK demodulator should be improved.

