

應用於Software-Defined Radio之寬頻主動電感壓控振盪器

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摘要

This thesis mainly studies Wideband Active Inductor Voltage Controlled Oscillator for Software-Defined Radio(SDR). We use active inductor to save the large area occupied by passive inductor. Its principle is to use Gyrator structure such that active MOSFET can equivalent to inductor, along with parasitic capacitor to form a resonator tank for an oscillator. The frequency range to be controlled by voltage is from 0.43GHz to 1.62GHz. The simulated phase noise is small then -103dBc/Hz at 1MHz offset. The IC layout is implemented with 0.35um CMOS Library offered by TSMC. The chip area is $0.57\text{mm} \times 0.57\text{mm}$.

關鍵字：SDR, VCO, Gyrator