

Circuit Simulation Project on

Design and Implementation of a Current Starved CMOS Voltage Controlled Oscillator Using eSim

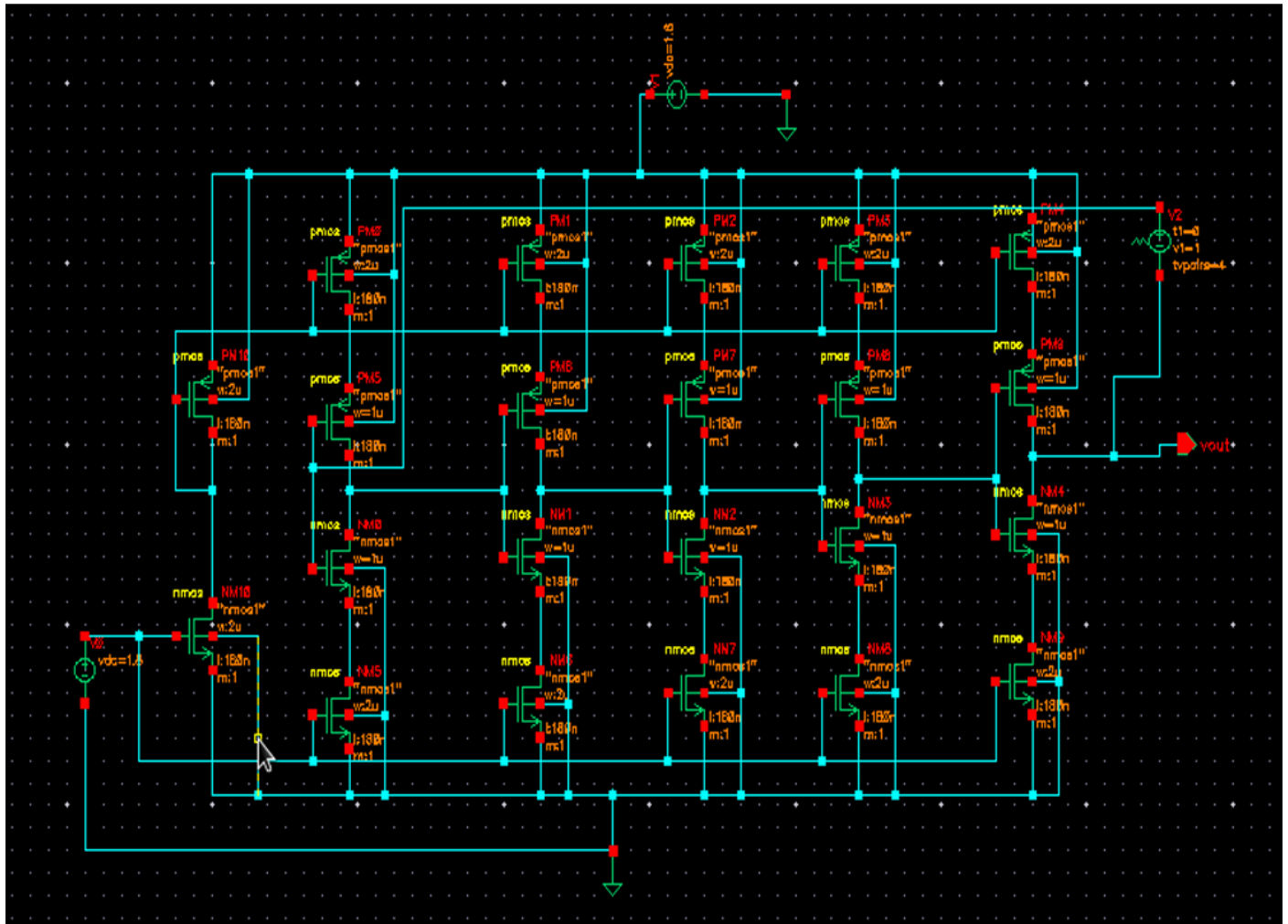
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Abstract:

A Voltage Controlled Oscillator (VCO) is a crucial component in modern electronic and communication systems, particularly in Phase-Locked Loops (PLLs) and frequency synthesizers. This project presents the design and implementation of a Five-Stage Current Starved CMOS VCO using CMOS technology in eSim. The proposed circuit, a ring oscillator composed of cascaded inverters, operates within a wide tuning range by varying the control voltage. The phase noise is optimized to ensure stable performance. The design prioritizes low power consumption and high-frequency operation, making it suitable for communication and RF applications. The VCO is designed using the eSim tool with a suitable CMOS process and supply voltage. The schematic and post-layout simulations are performed in eSim to validate the performance and efficiency of the design.

Circuit:



References :

1. [IRJET-V5I3191.pdf](#)