Low power OTA on 28nm CMOS technology

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***Abstract*—Operational transconductance amplifiers are widely used in various applications like BGRs, VCO, VGA etc. In this abstract a power efficient two staged OTA has been designed on Synopsys Custom Compiler at 28nm technology. It is having a DC gain of 53.5dB and GBW of 4MHz. This OTA could be used as an audio amplifier.**

I. REFRENCE CIRCUIT DETAILS

This OTA is made on Synopsys Custom Compiler at 28nm bulk CMOS technology. Some of the simulated design specs are as follows:

S.no	Design Specifications	Obtained Value
1	DC Gain (dB)	53.5dB
2	GBW	4.1MHz
3	Supply Voltage	1V
4	Power consumption	17.3µW
5	Phase Margin	63.5º
6	Slew Rate (SR)	~2 V/µs

II. REFRENCE CIRCUIT DESIGN

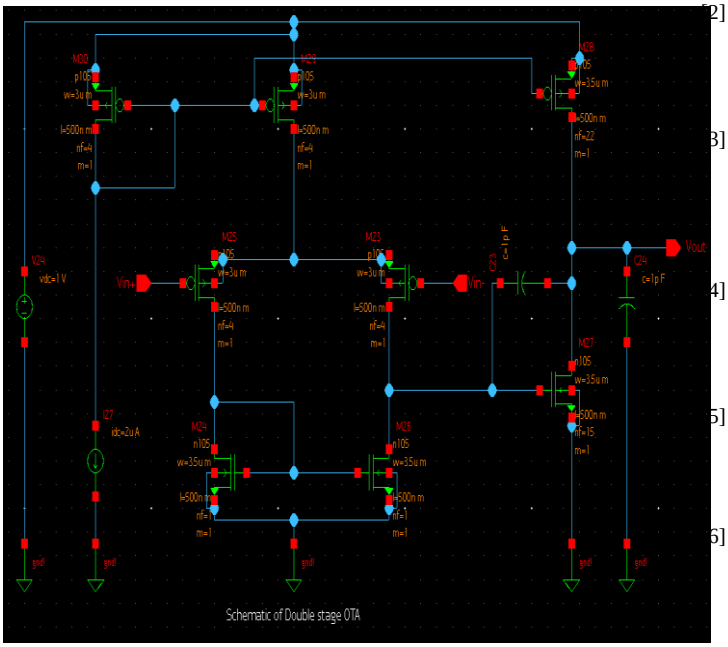

Fig 1: Actual Circuit schematic

III. REFRENCE WAVEFORMS AND AREA ESTIMATE

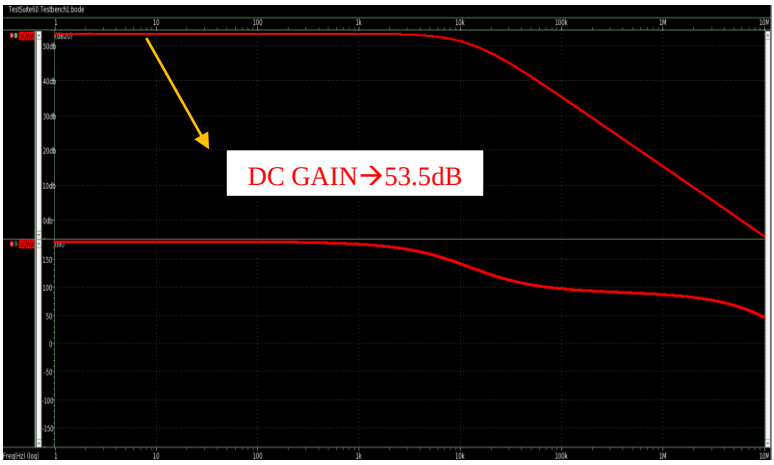

Fig 2: Actual Bode Gain and Phase Plot Obtained

Maximum actual area estimate: ~92µm^2.

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