Two bit magnitude Comparator in Mixed-Signal

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Abstract—**A magnitude Comparator is a combinational circuit that compares two binary numbers in order to find out whether one binary number is equal, less than, or greater than the other binary number. We logically design a circuit for which we will have two inputs one for A and the other for B and have three output terminals, one for A $>$ B condition, one for A = B condition, and one for A $<$ B condition.**

Index Terms—**2 bit comparator, mixed-signal, MOS Transistors, Logic gates**

I. REFERENCE CIRCUIT DETAILS

A 2 bit comparator is used to compare two binary digits each of 2 bits. The circuit consists of 4 inputs A1,A0,B1,B0 and produces three outputs which are less than(A<B), equal to(A=B), greater than(A>B).
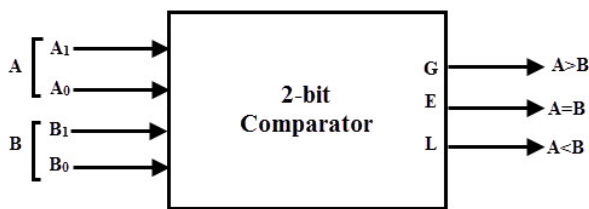

Fig. 1. Caption

II. REFERENCE CIRCUIT DESIGN

The 2 bit magnitude comparator in mixed signal is shown in Fig.2. From Fig.2 some logic gates from comparator circuit is replaced with PMOS and NMOS transistors.
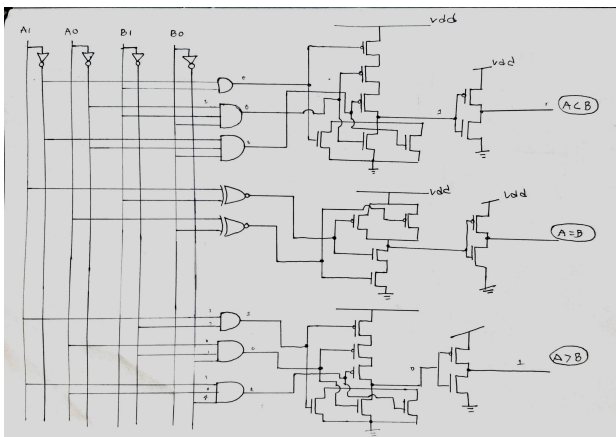

Fig. 2. Mixed Signal 2 bit comparator

III. REFERENCE WAVEFORMS

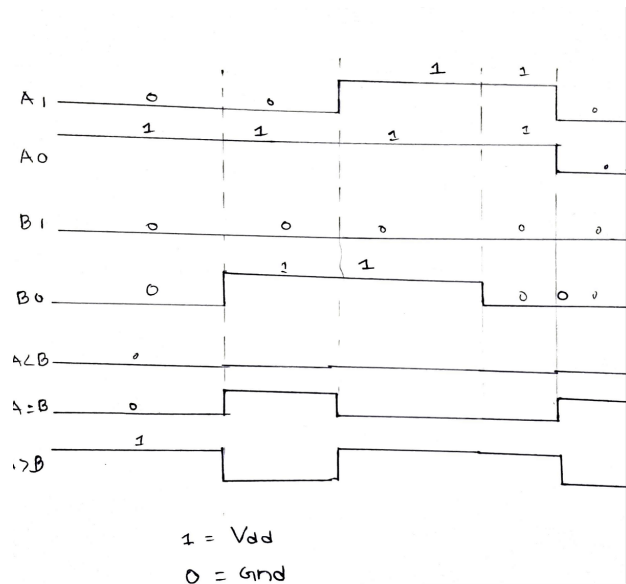The reference waveform of 2 bit comparator is shown in Fig.3

Fig. 3. Reference Waveform of 2 bit comparator

IV. REFERENCES

https://www.geeksforgeeks.org/magnitude-comparator-in-digital-logic/