

# 10-bit C2C DAC

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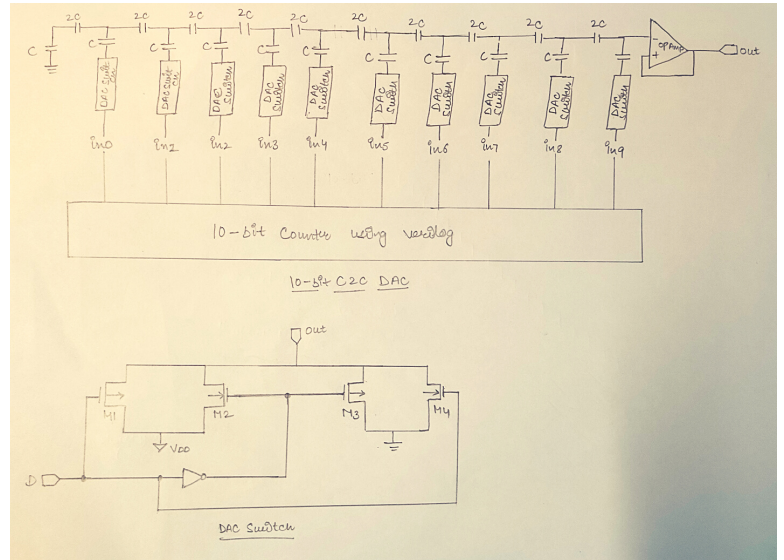
## Abstract:

This is a mixed signal design consisting of a 10-bit DAC and mod-1024 counter. DAC is a device which converts a digital signal to pseudo analog signal. So to provide digital signal to DAC I'm using mod-10 counter.

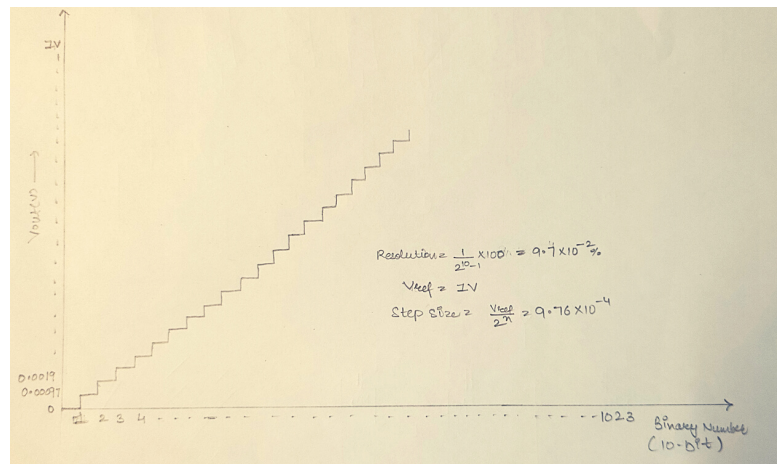
## Reference Circuit Details:

Many types of capacitive arrays are used for DAC design but C2C is preferred due to its small capacitance ratios and low power consumption. Apart from C2C array, DAC switches, OpAmp and a mod-1024 counter is also used in this circuit. This circuit design also consists of DAC switch which is implemented using NMOS and PMOS. This switch will pass Vref and Gnd to C2C array based on the zeroes and ones coming from the counter output. The counter will be implemented using Verilog code. All other components will be implemented using either Analog IPs or Analog Components.

## Reference Circuit Design:



## Reference Waveform:



## Reference Papers:

- [https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=3253&context=etd\\_all](https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=3253&context=etd_all)
- Fundamentals of Digital Circuits by A Anand Kumar
- Counter Type ADC Working and Its Advantages and Disadvantages (elprocus.com)