

# RESISTANCE-TO-DIGITAL CONVERTER

YOGAPRIYA.B, EASWARI ENGINEERING COLLEGE, CHENNAI

September 28th, 2022

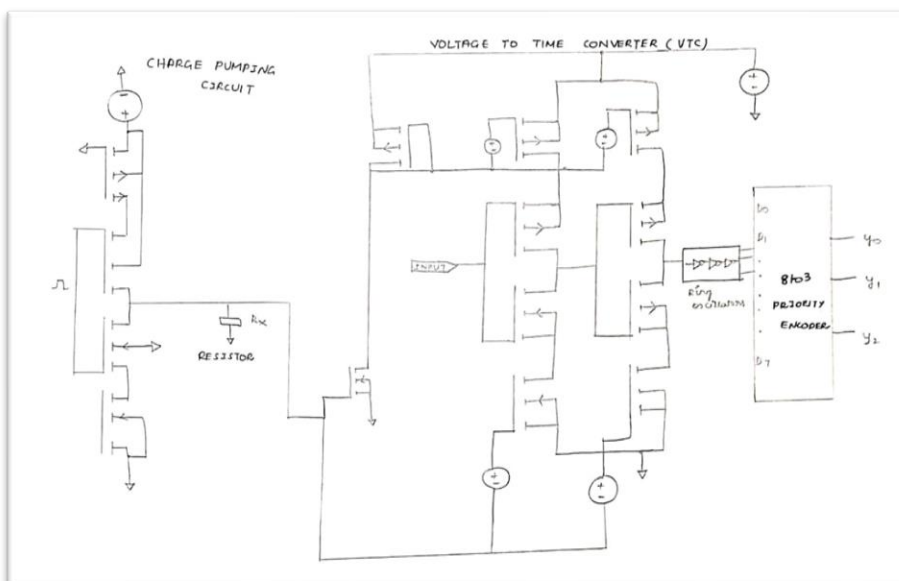
## ABSTRACT:

In this development of resistance-to-digital (R2D) Converter circuit is presented. This circuit is designed to determine the value of an external resistor in order to configure various settings within the Integrated Circuits. The R2D circuit provides several advantages for power supplies, such as the elimination of leakage current, smaller solution size, lower design cost, tighter output voltage accuracy and greater design flexibility.

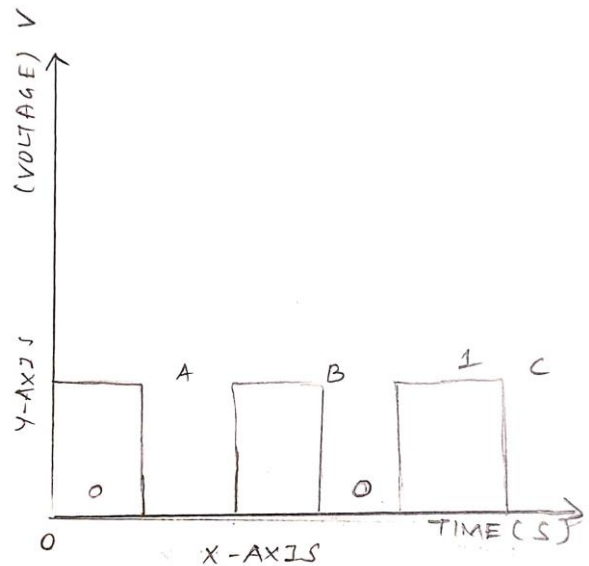
## REFERENCE CIRCUIT DETAILS:

As shown in the figure we have analog circuit and digital circuit in which altogether formed a mixed circuit signal. A charge pumping circuit is generally uses capacitors as the energy storage element. This (R2D) circuit consists of cmos, ring oscillator, priority encoder, charge pump circuit, resistor. The analog part consists of a resistor that is grounded. Digital circuit consists of ring oscillator that consist of some inverters. It consists of analog and digital which is altogether a mixed signal circuit is formed. The purpose of this project is to determine the value of resistors using end-to- end open-source EDA tools.

## REFERENCE CIRCUIT DIAGRAM



## REFERENCE WAVEFORM:



## REFERENCES:

S. Nakagawa, K. Horikoshi and H. Ishikuro, "A High-Resolution Time-Based Resistance-to-Digital Converter with TDC and Counter," 2018 IEEE 61st International Midwest Symposium on Circuits and Systems (MWSCAS), 2018