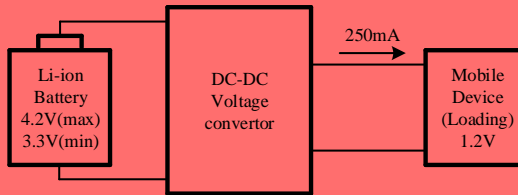




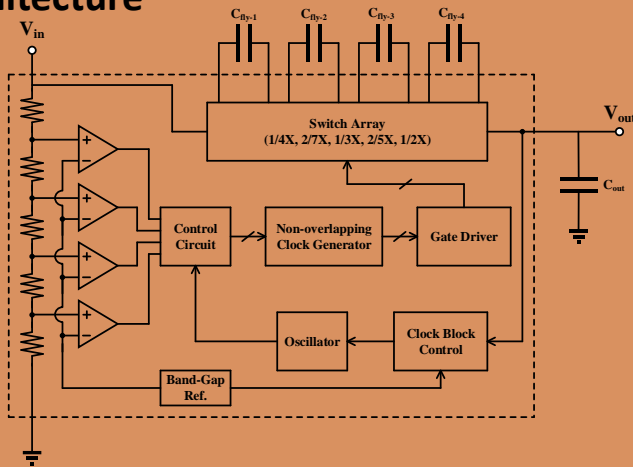
# A Buck Mode Charge Pump Operating under Large Current Output

## Background

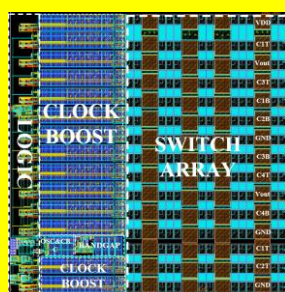
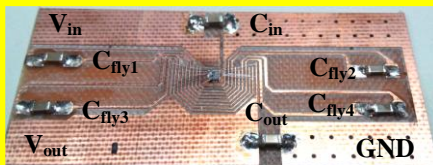
Need a device to transfer voltage from high to low voltage



## Architecture



## PCB & Chip



## Efficiency Improved Methods

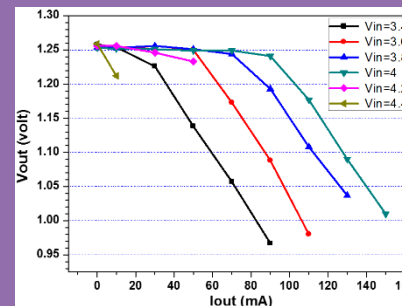
- ◆ Clock blocking technique
- ◆ Clock boosting technique
- ◆ Fractional conversion gains switch array

## Specification

- ◆ Working range : 3.3-5.5V
- ◆ Max. power efficiency : 60%@250mA (input:3.3-5.5V)
- ◆ Loading ability : 250mA
- ◆ Output voltage accuracy :  $1.2V \pm 4\%$
- ◆ Output ripple : 30mV@250mA
- ◆ Process : TSMC 0.35  $\mu\text{m}$

## Measurement Result

- ◆ Load regulation : 0.133 mV/mA (@4V, 0~90mA)



- ◆ Line regulation : 36mV(1.1%/V) (@3mA)

