

2Ei5

Lab#6

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Lab section: L01

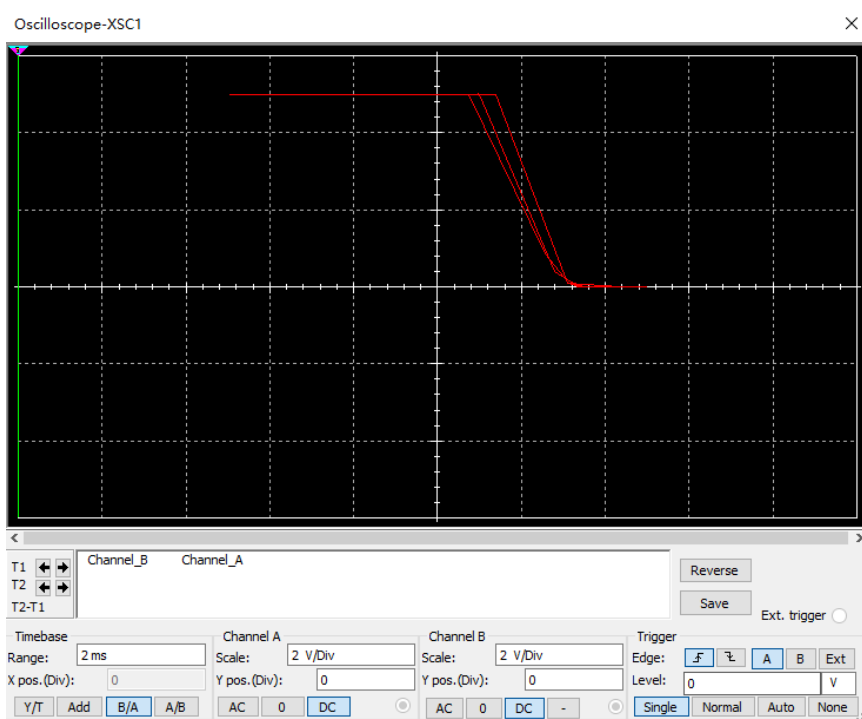
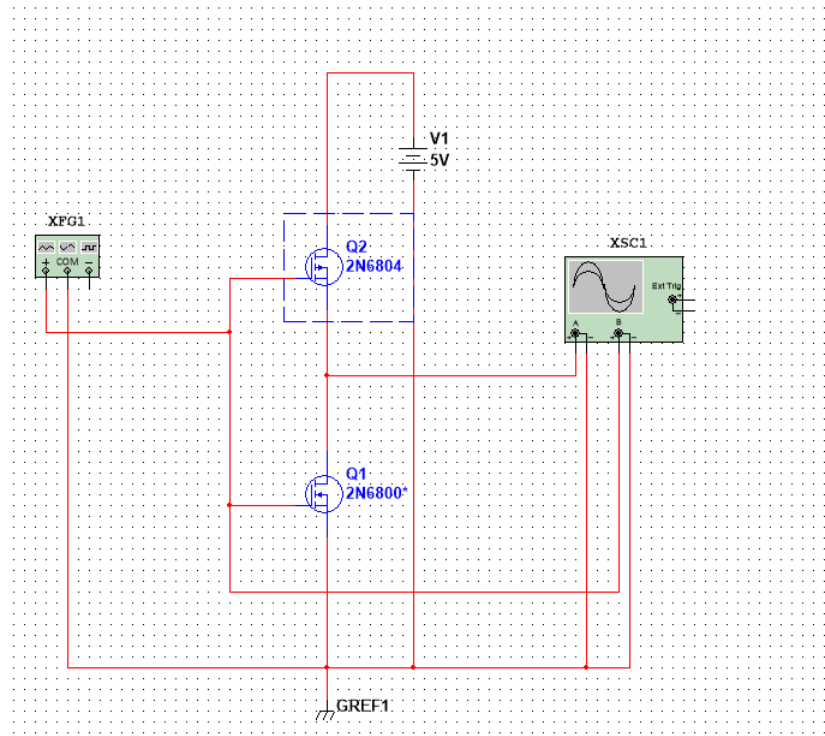
Date: Apr 5th 2021

As a future member of the engineering profession, the student is responsible for performing the required work in an honest manner, without plagiarism and cheating.

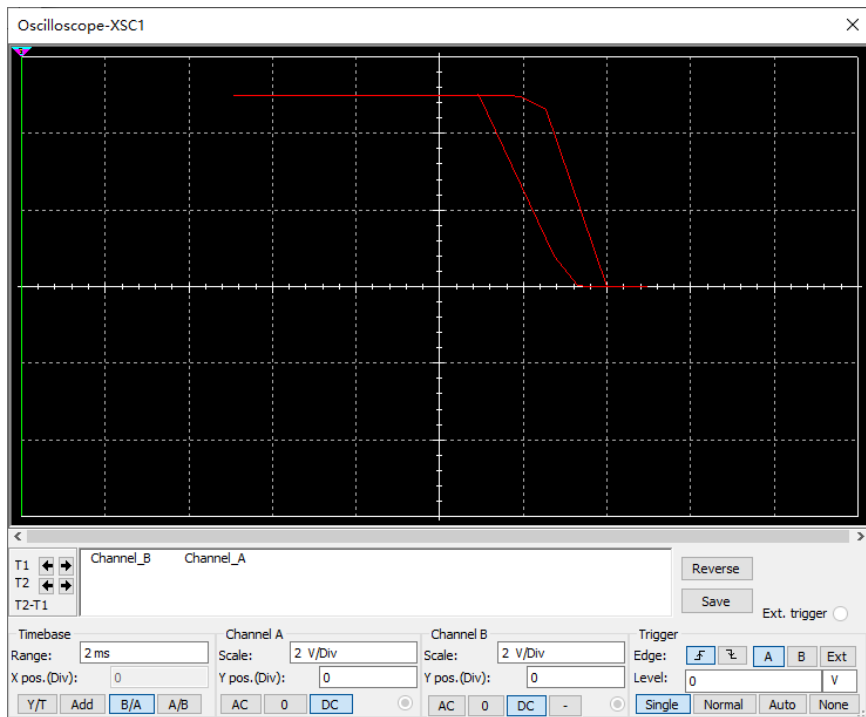
Submitting this work with my name and student number is a statement and understanding that this work is our own and adheres to the Academic Integrity Policy of McMaster University and the Code of Conduct of the Professional Engineers of Ontario.

Submitted by Yichen Lu,luy191,400247938

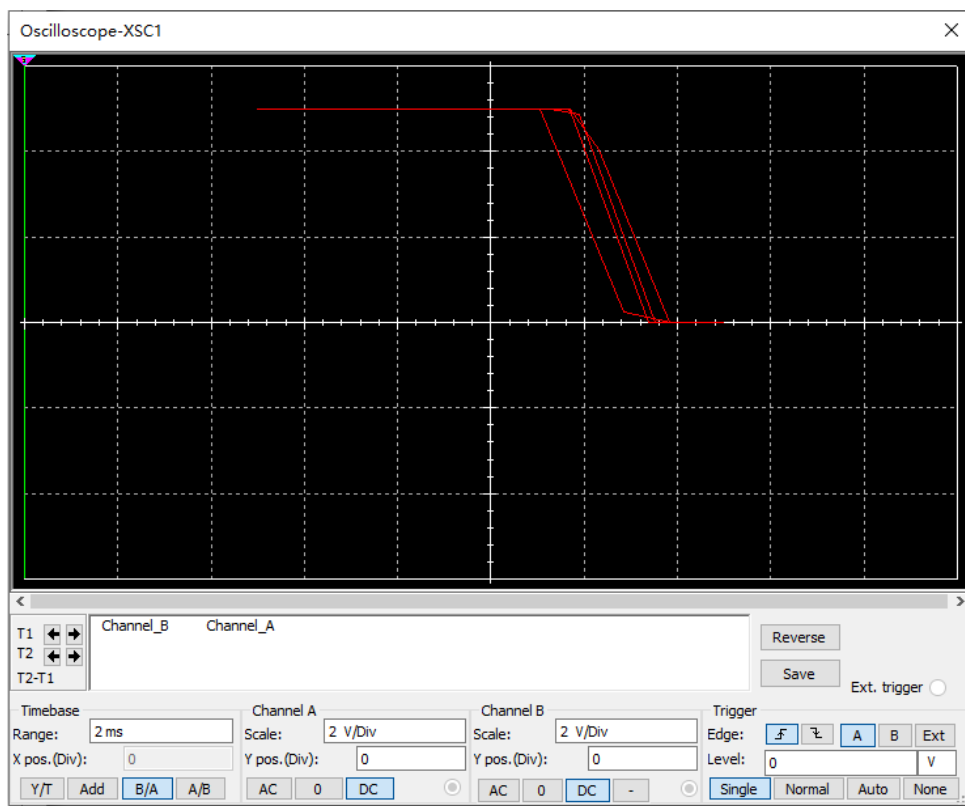
Task 1



VCT Graph with Default settings

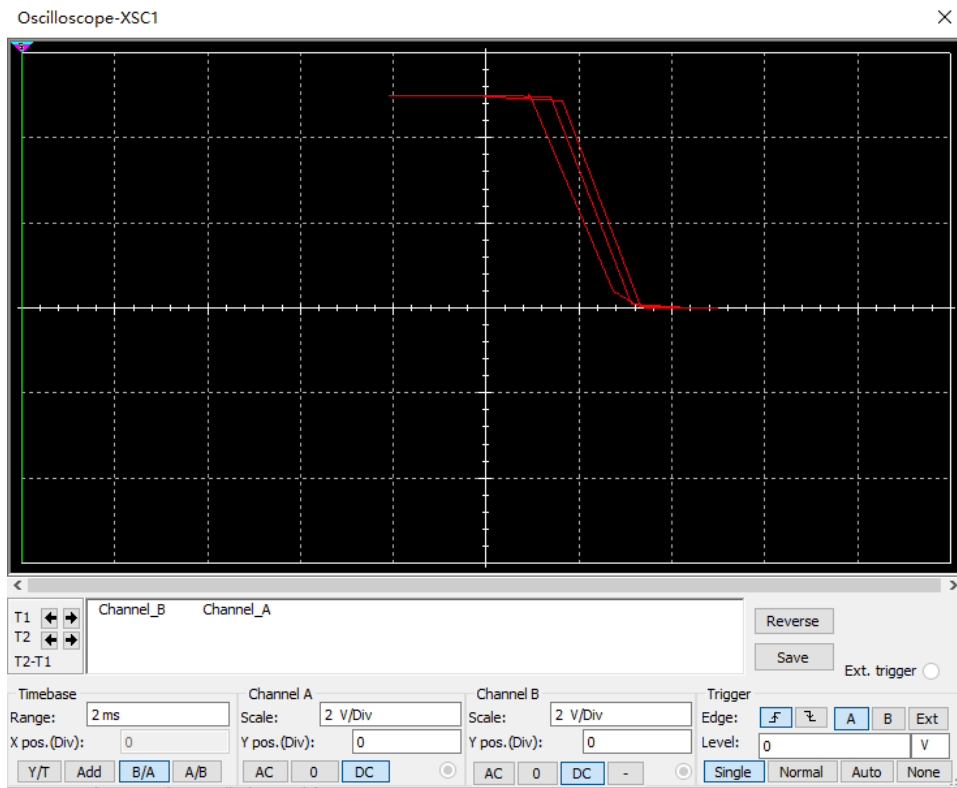


With $K_n = 0.3$, it is concluded that the saturation area of both MOSFETs (the linear area in the middle) has been shifted to the right, which is affected by a drop in the value of K of the N-MOSFET.



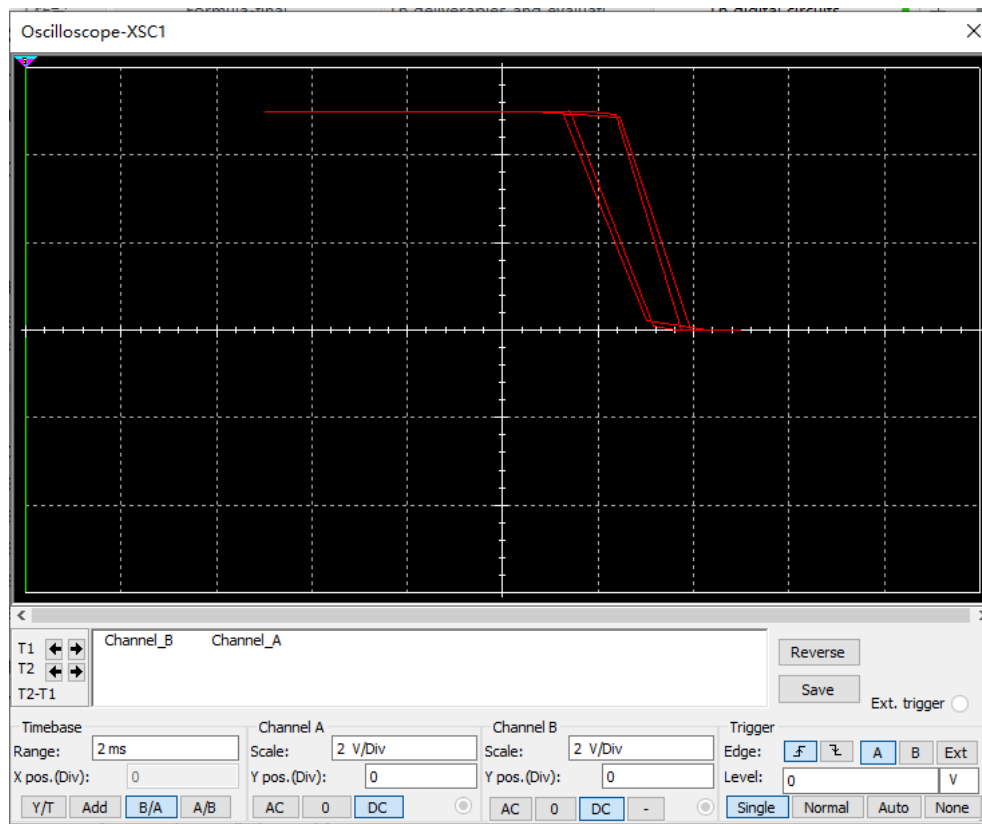
With $K_n = 1.2$

It is conclude that the saturation section of both MOSFETs (the linear part at the middle) has been moved to left, which is affected by an grow in value of K of the N-MOSFET.

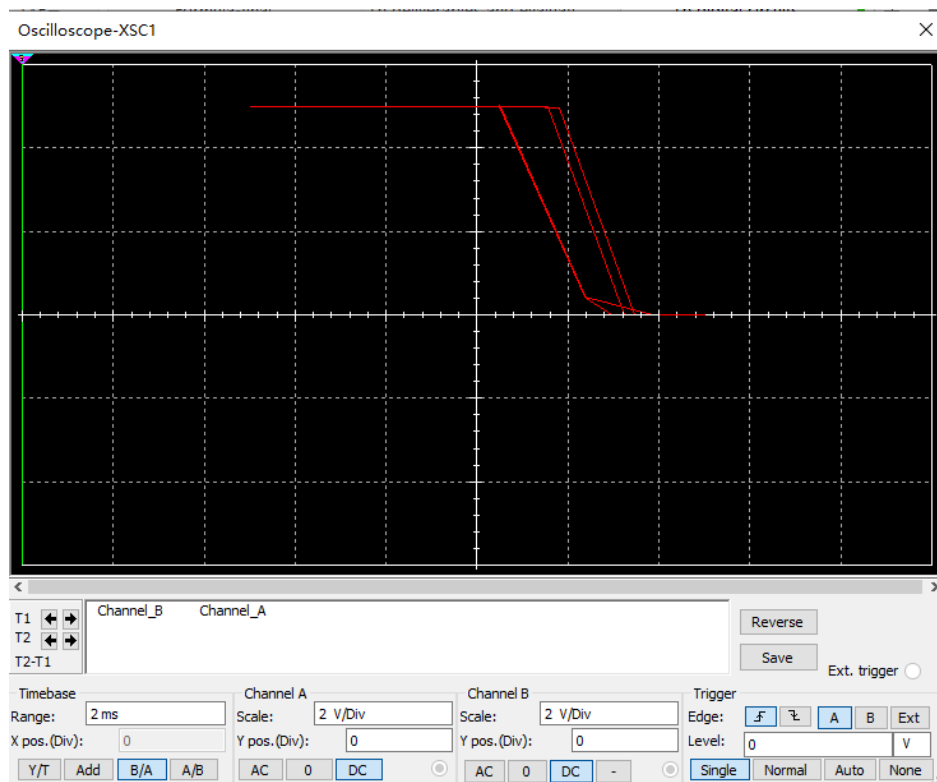


With $V_{tn} = 1V$

It is conclude that the graph is the turn on value is moved down when both MOSFETs are in Saturation.



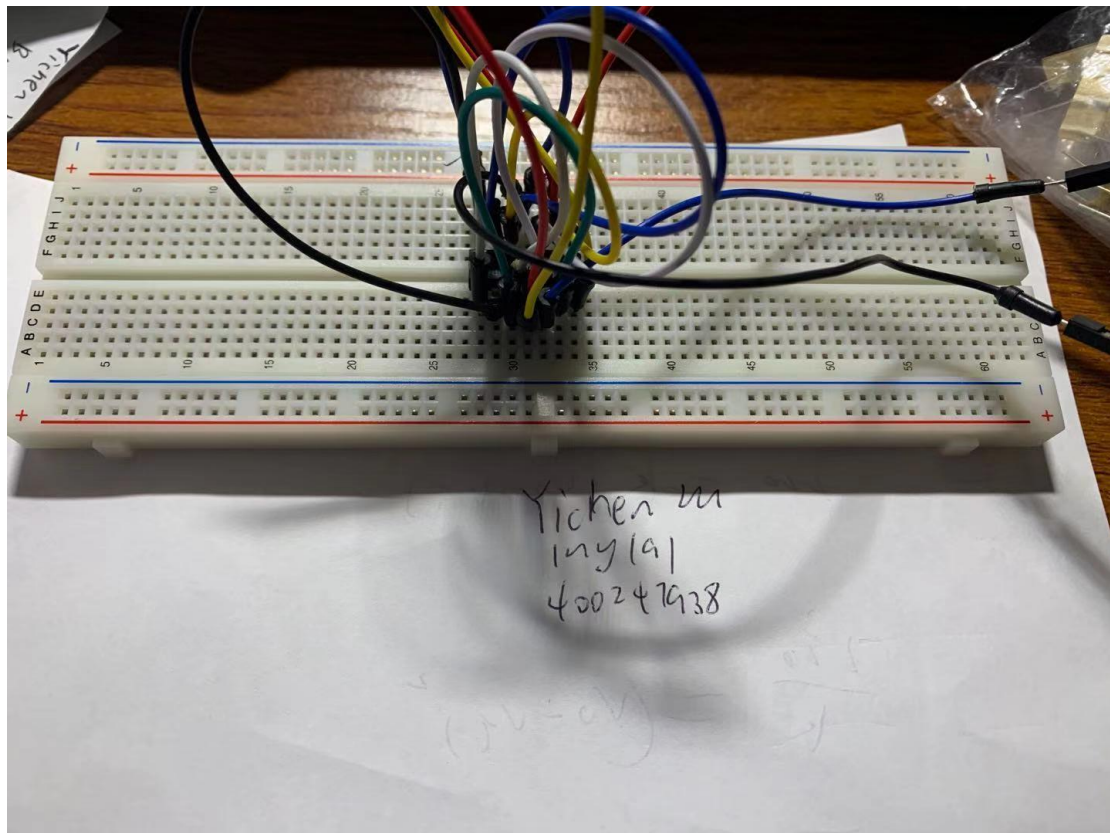
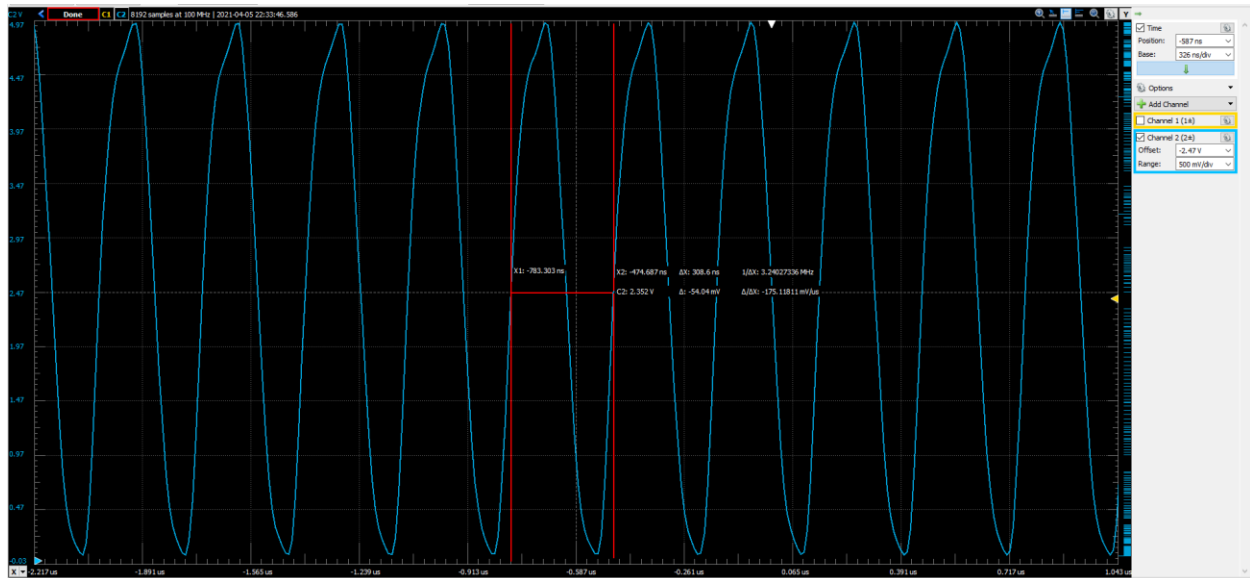
It is conclude that the graph is the turn on value is moved up when both MOSFETs are in saturation.



With $V_{tn} = 1.5V$, and $V_{pn} = -2V$.

It is conclude that the graph is the turn on value is moved down when both MOSFETs are in saturation.

Task2



The period measured is about 308.6ns.

Period = $2 \cdot t \cdot \#$ of inverter

$$T = 220/2/3 = 36.67\text{nS}$$