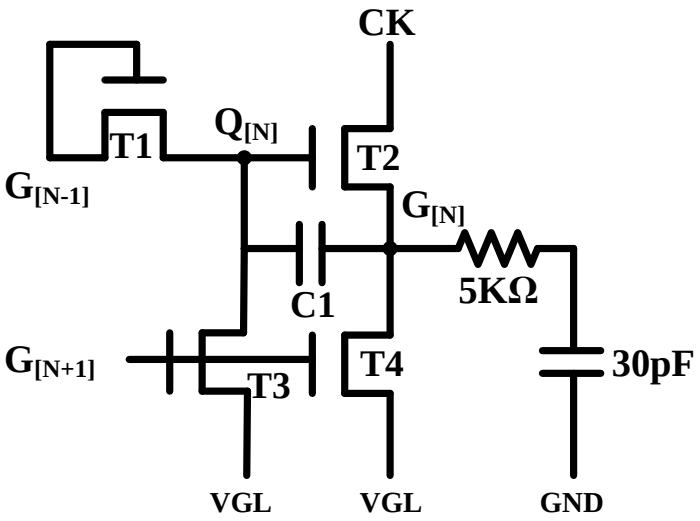
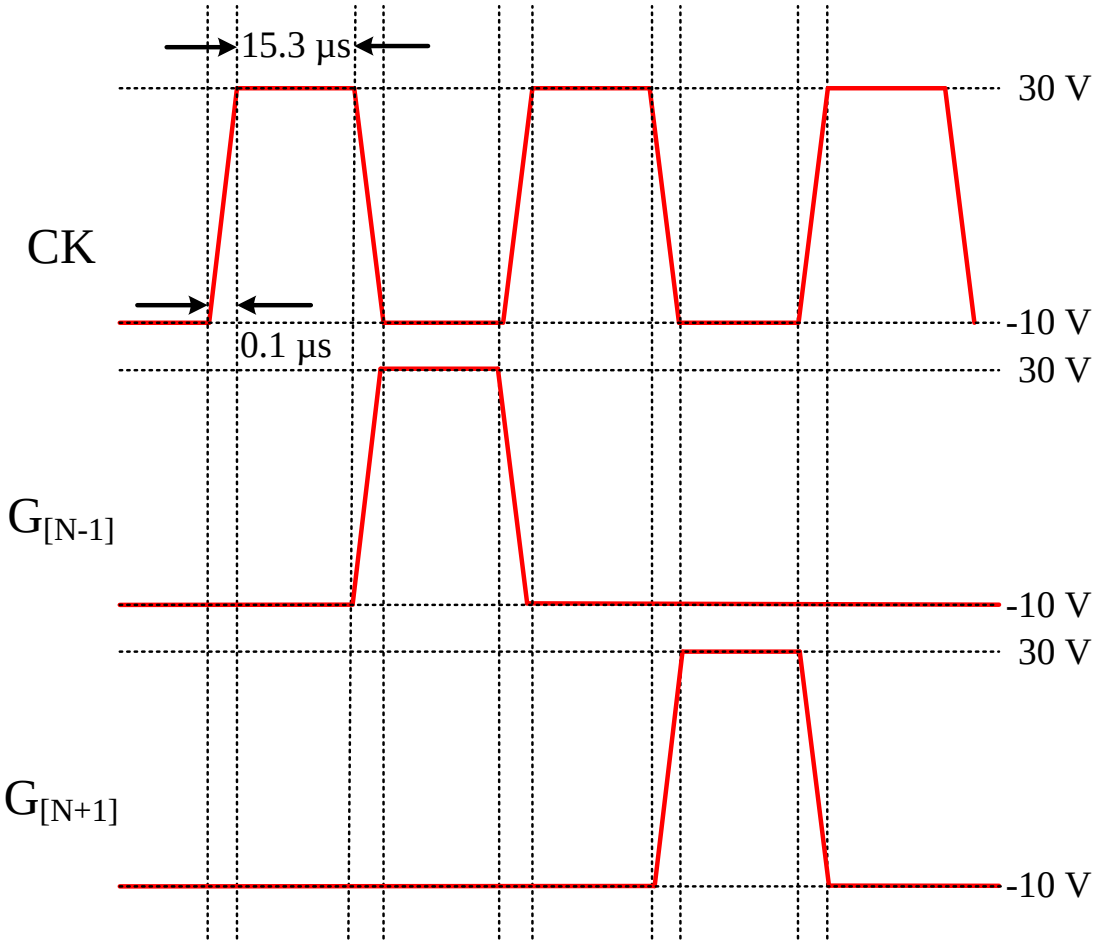
TFT LCD Simulation

1. Dynamic Shift Register (Single-type MOS device)





Simulated parameter:

VGL = -10 V C1 = 2 pF

M_{T1} = 50 M_{T3} = 50

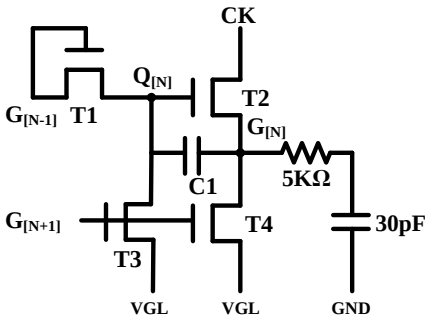
M_{T2} = 300 M_{T4} = 300

TFT LCD Simulation

- i. Please explain how the shift register generates the high level of $G_{[N]}$. (Hint: investigate $Q_{[N]}$ waveform)
- ii. Please record the rising time and falling time of $G_{[N]}$.
- iii. Change M_{T2} and M_{T4} to 500, and record the rising time and falling time of $G_{[N]}$ again. What's the difference from question ii, and why?

TFT LCD Simulation

2. Dynamic Shift Register (Two-stage operation)

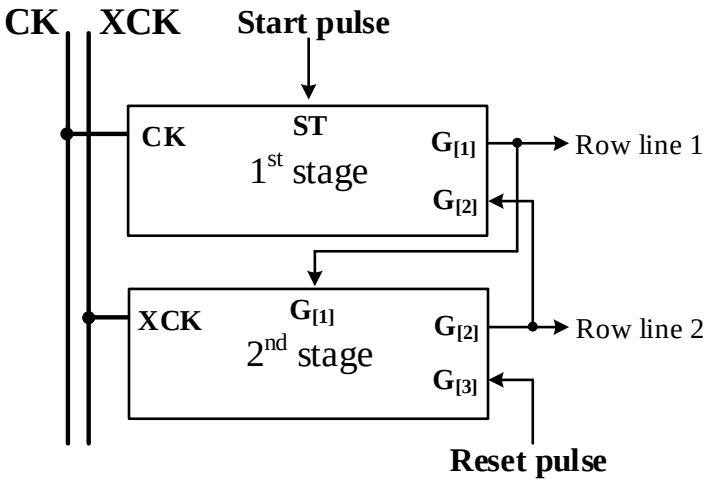


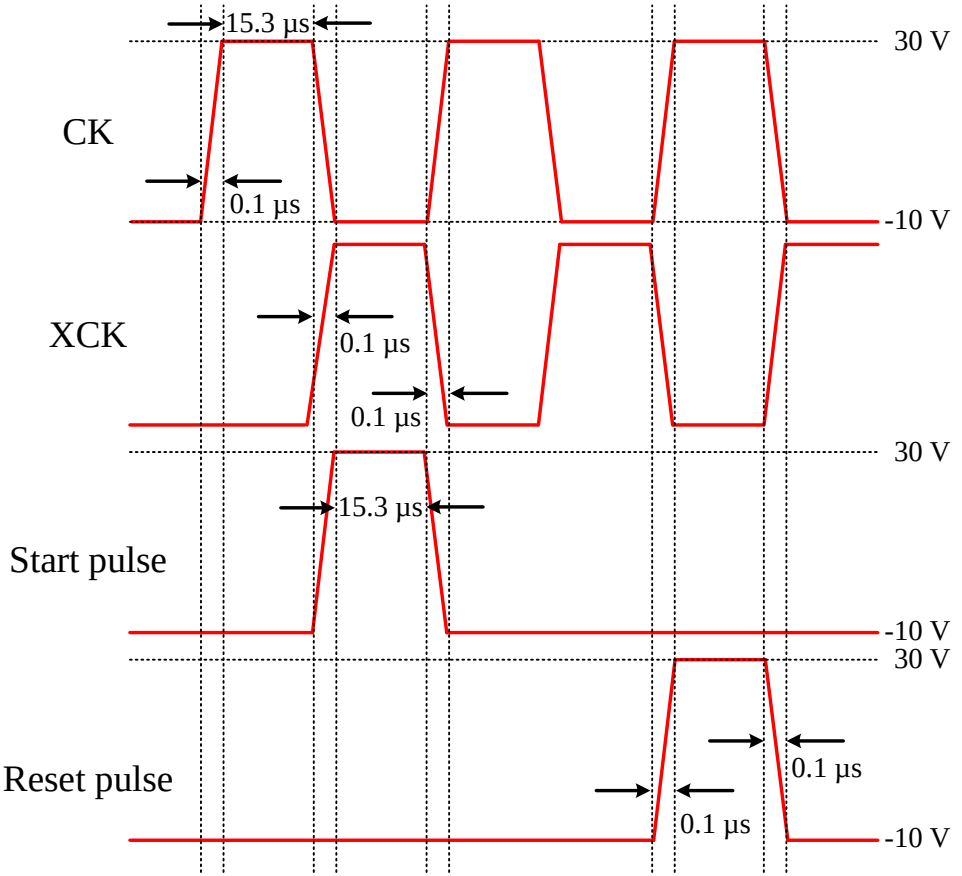
Simulated parameter:

VGL = -10 V C1 = 2 pF

M_{T1} = 50 M_{T3} = 50

M_{T2} = 300 M_{T4} = 300





TFT LCD Simulation

- i. Please save the sequential output waveforms of two stages. ($G_{[1]}$ and $G_{[2]}$)

- ii. What are the functions of “start pulse” and “reset pulse”?