

2EI5 Lab 5

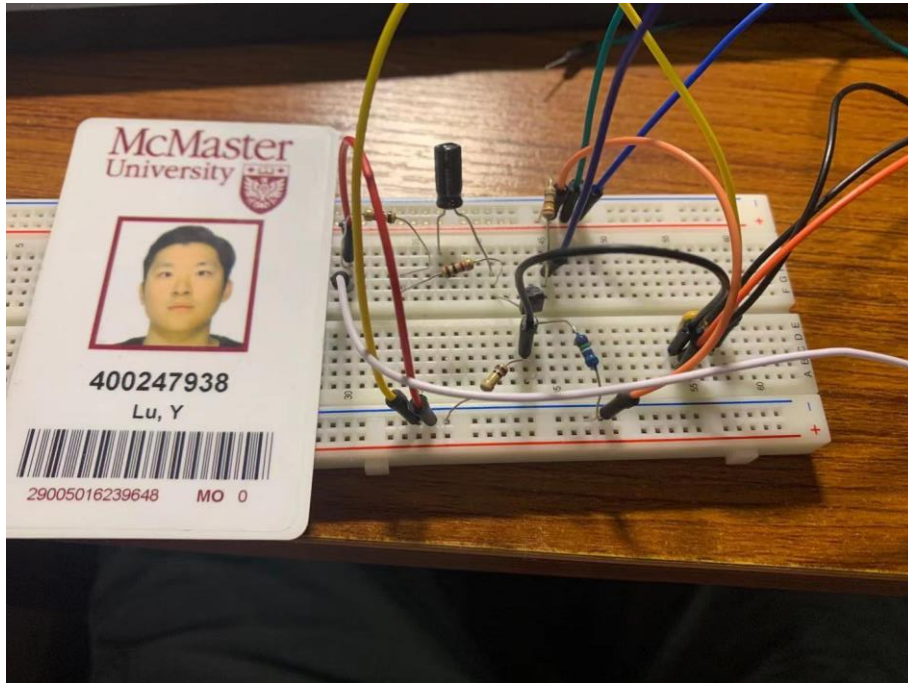
Yichen Lu L01

400247938

luy191

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Task1



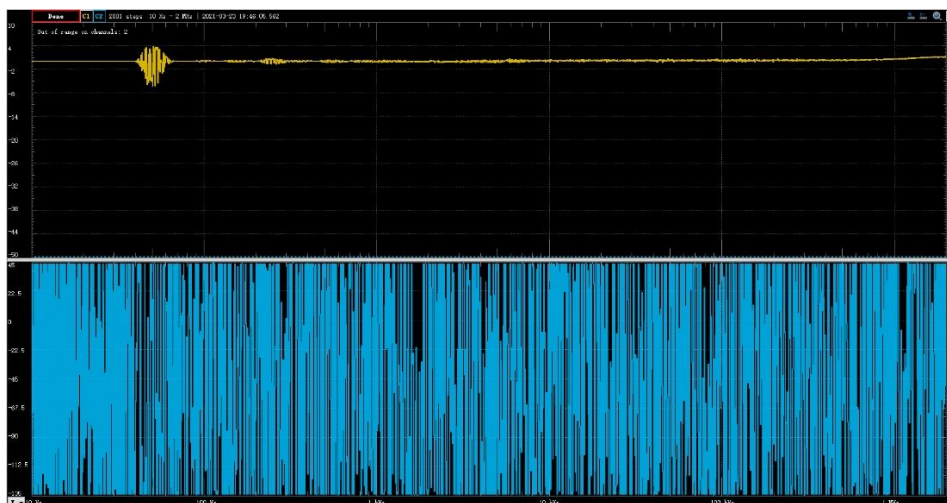
Channel 2

3.838 V

3.838 \tilde{V}

2 m \tilde{V}

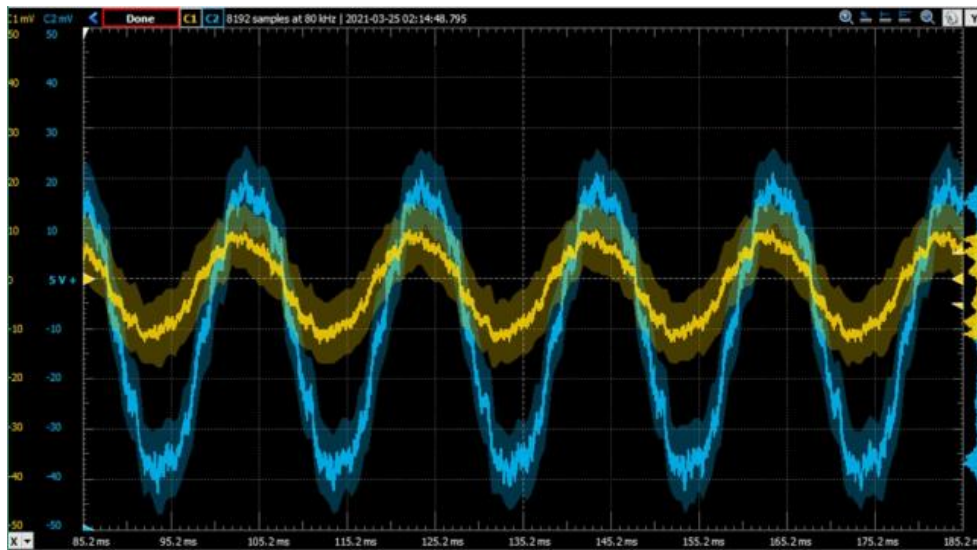
Network analyzer



Gain:39

Corner frequencies: 1.44KHz

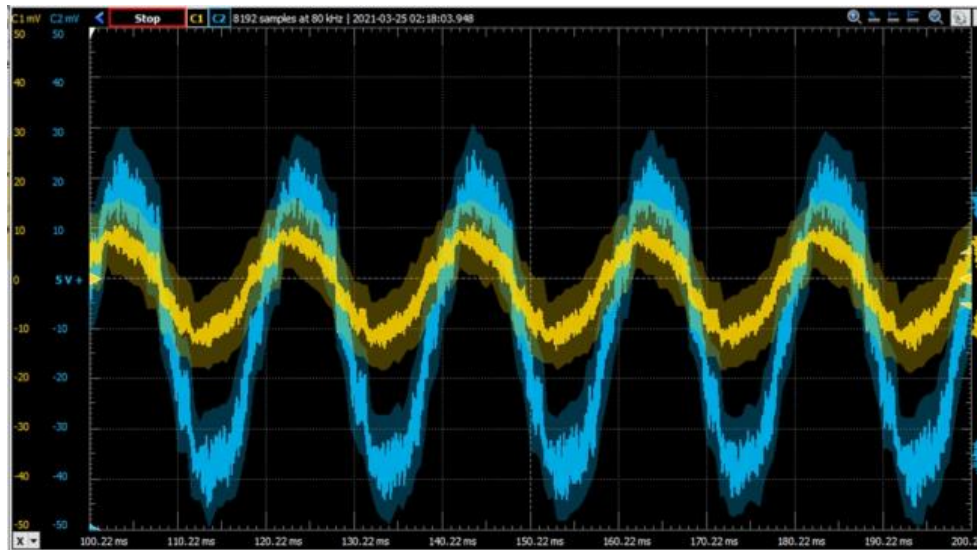
For 5mv amplitude



The magnitude = 26mv

Phase of gain = 16

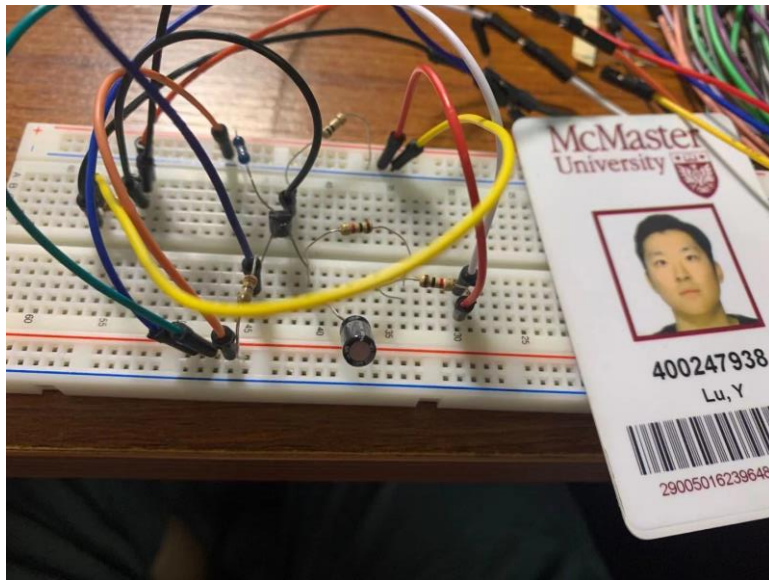
For 20 mv amplitude



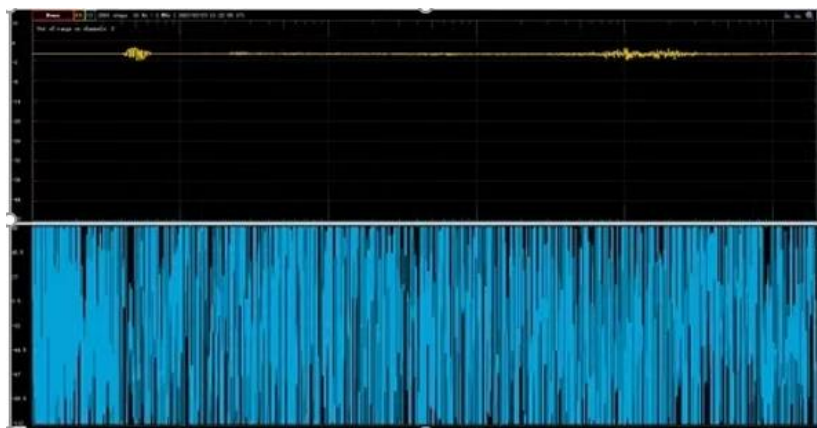
The result shows how a common emitter amplifier works.

I can calculate the value of gain and the phase.

Task 2



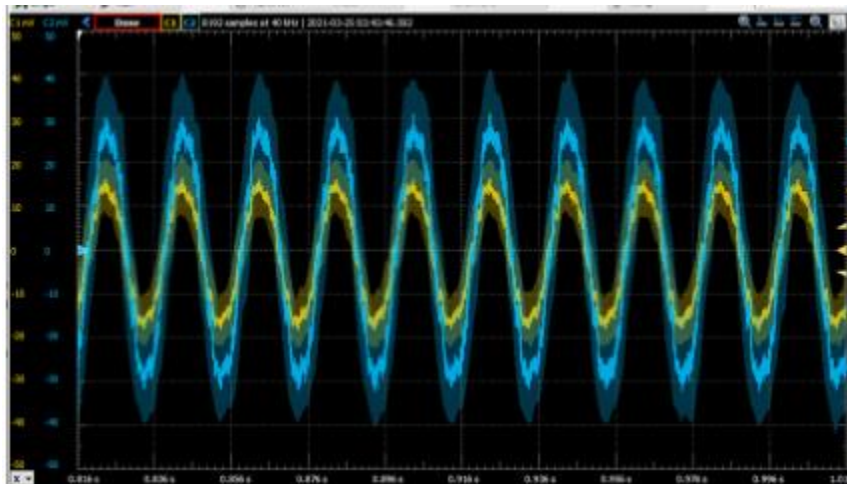
Network analyzer



Gain:50

Corner frequencies: 1.28KHz

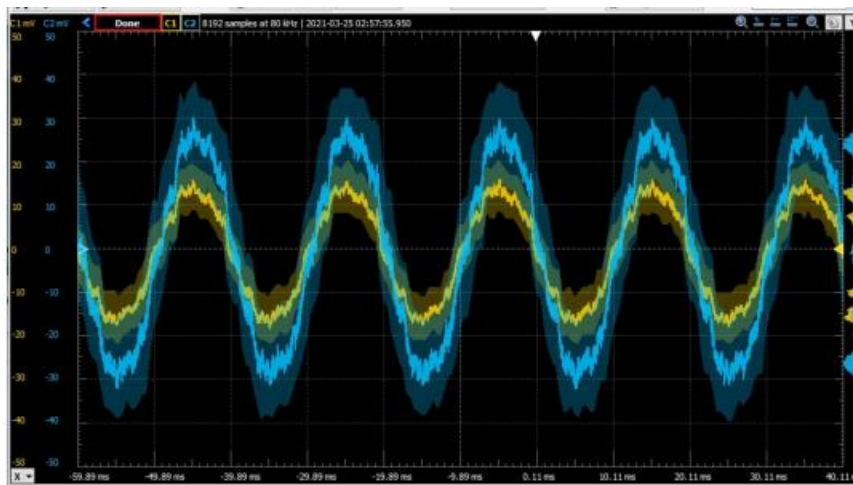
For 20mv amplitude



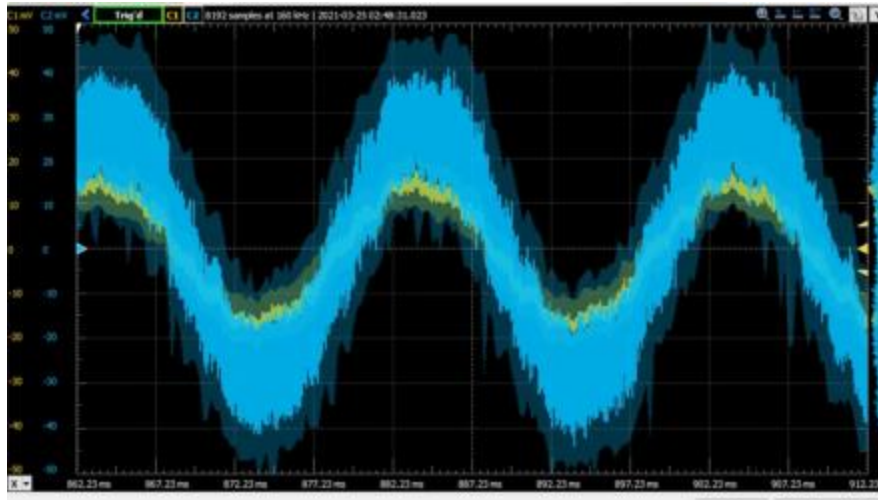
Magnitude = 40mV

Phase of gain = 20

For 30mV amplitude



For 2V amplitude



As we can see, the larger the amplitude are getting, the larger the distortion of output waveform will get.

In conclusion, we are supposed to keep the amplitude to be small in order to make the signal to be amplified with small distortion.