

Figure 3

Et on simule le 2ième étage illustré dans la figure 4. Avec les curseurs, on mesure $f_c=719.4\text{Hz}$. À 4KHz, Atténuation est 24.5dB.

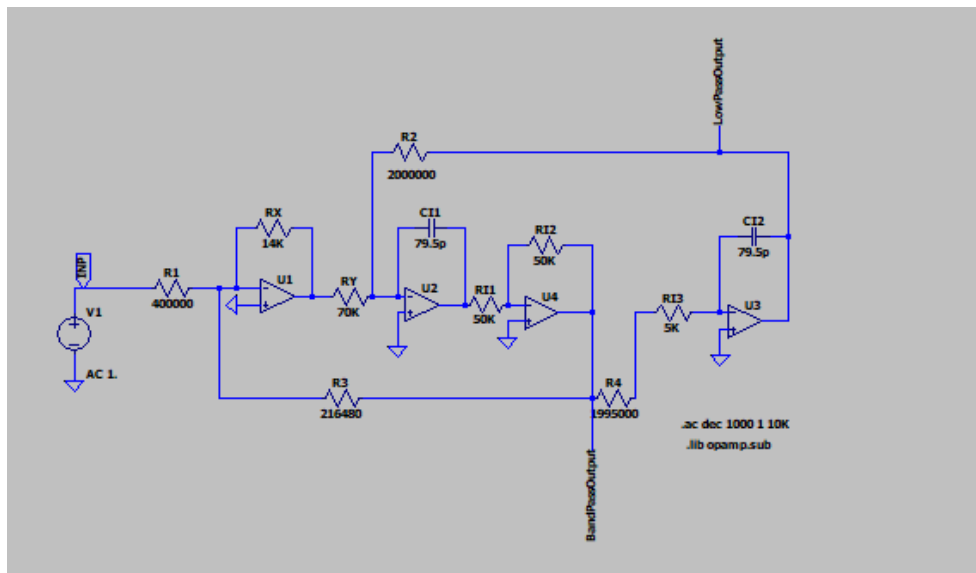


Figure 4

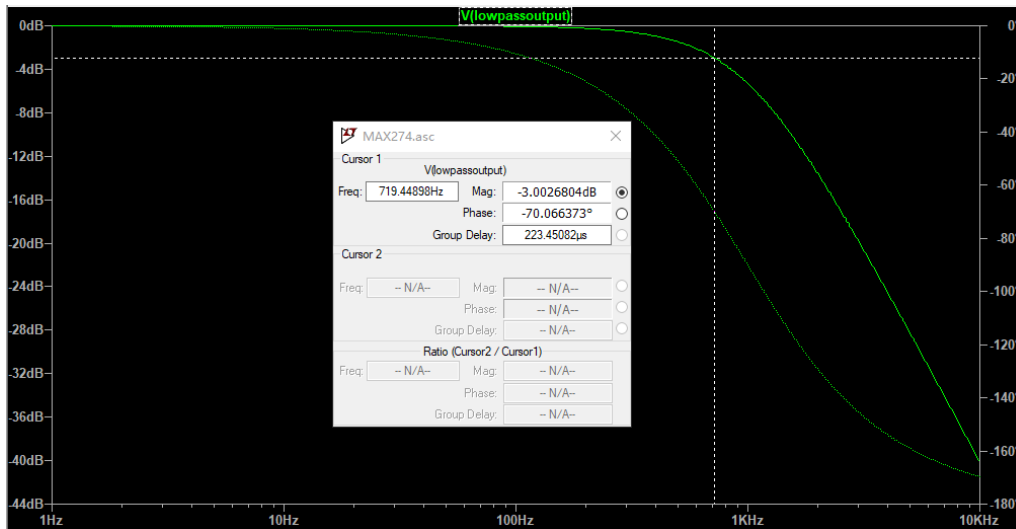


Figure 5

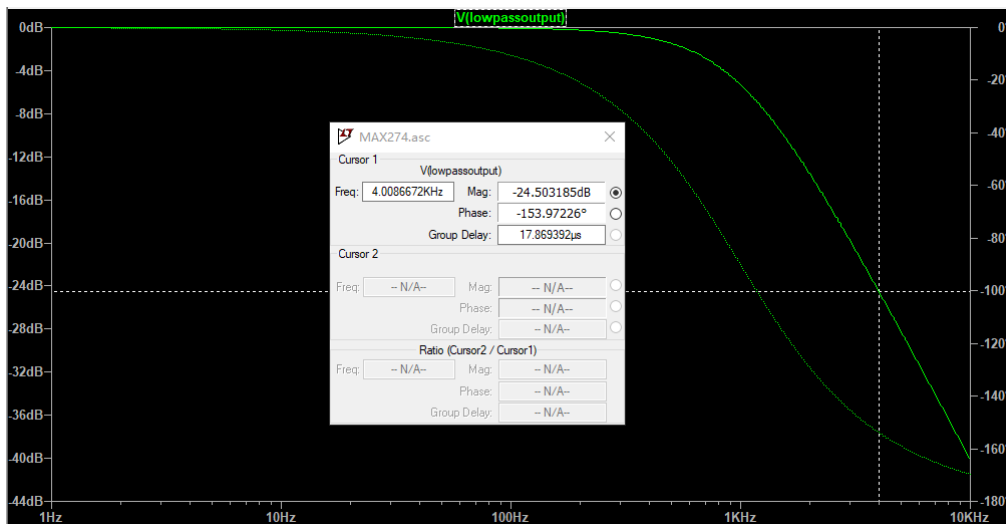


Figure 6

Ensuite, on le met en commun (illustré dans figure7) et on fait des mesures. On obtient $f_c=1\text{KHz}$. À 4KHz , atténuation est 47.8dB . $BA=4\text{KHz}$. Donc il vérifie bien le cahier des charges.

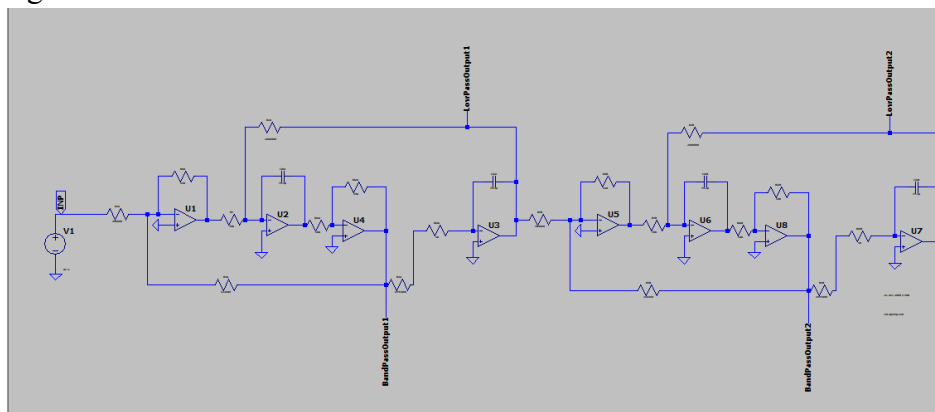


Figure 7

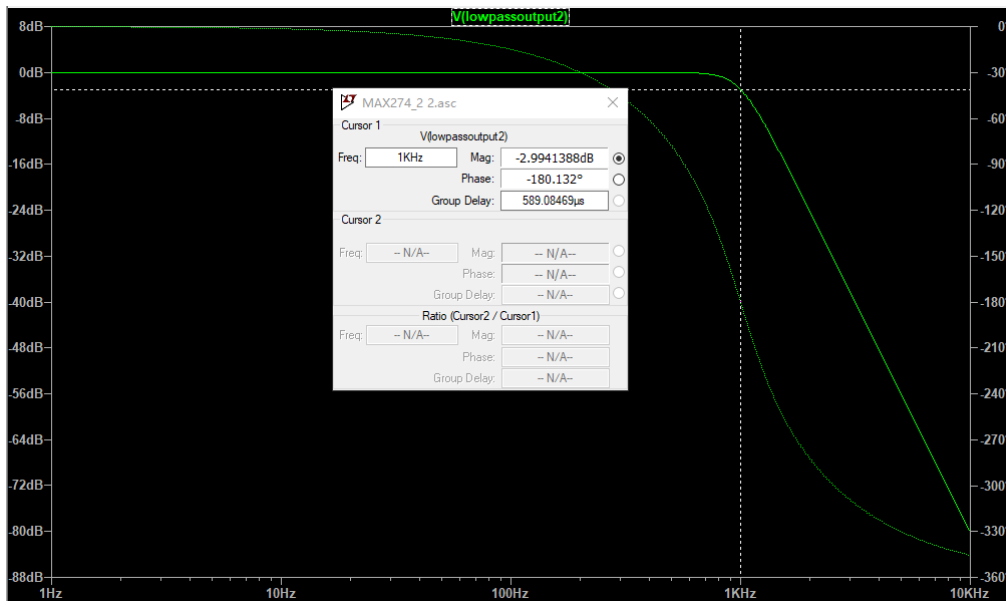


Figure 8

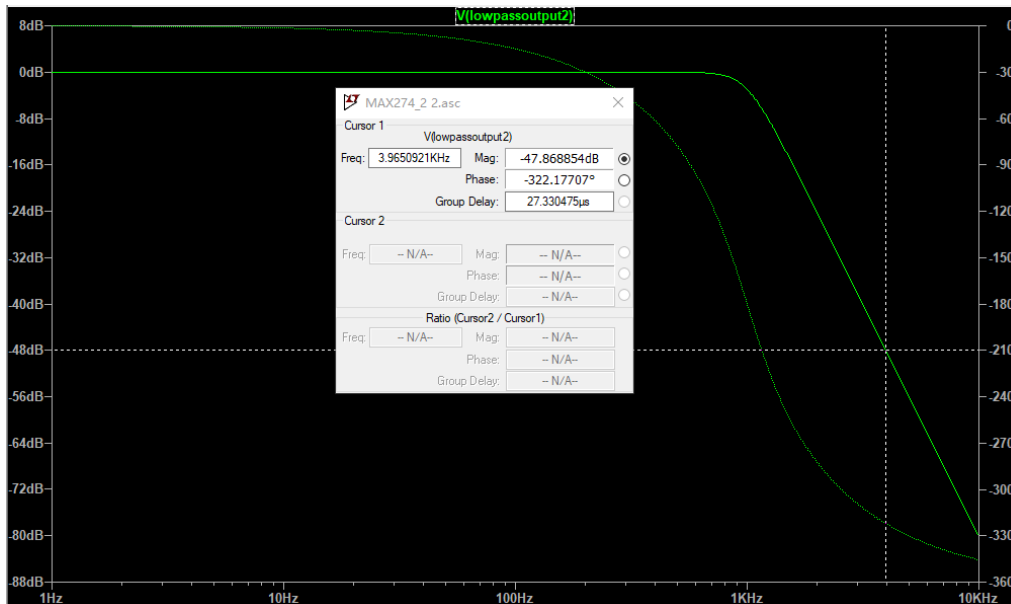


Figure 9

Question2

En appliquant les valeurs proposées par TD, on réalise ce montage du filtre passe-bande dans LTspice (illustré dans figure10). Et on fait des mesures et obtient : $f_1' = 8.59\text{KHz}$, $f_1 = 9.486\text{KHz}$, $f_0 = 9.98\text{KHz}$, $f_2 = 10.52\text{KHz}$, $f_2' = 11.61\text{KHz}$.

Donc $B = 1.034\text{KHz}$, $B' = 3.02\text{KHz}$. il vérifie bien le cahier des charges.

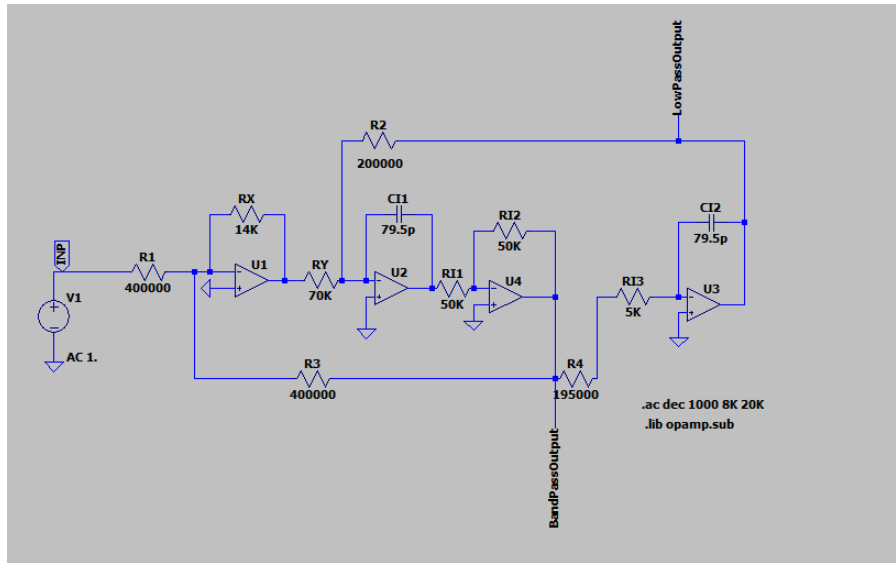


Figure 10

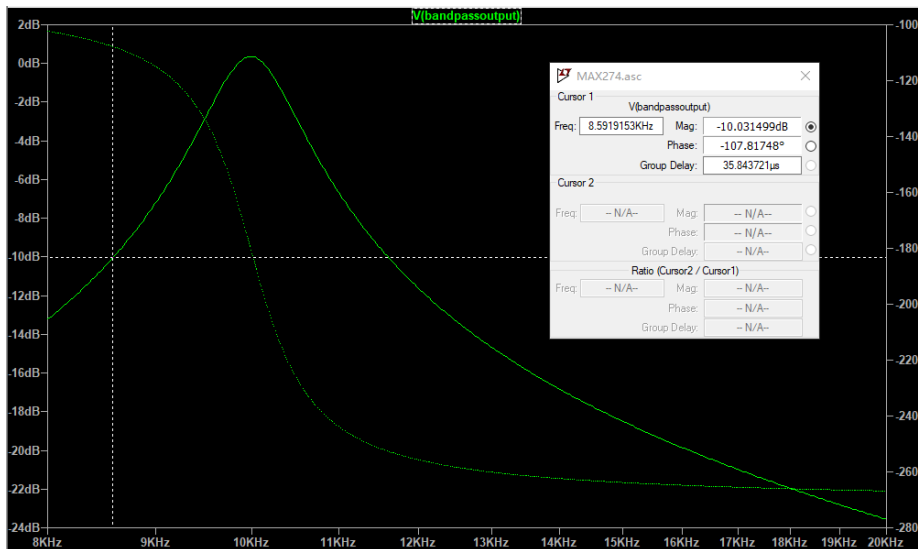


Figure 11

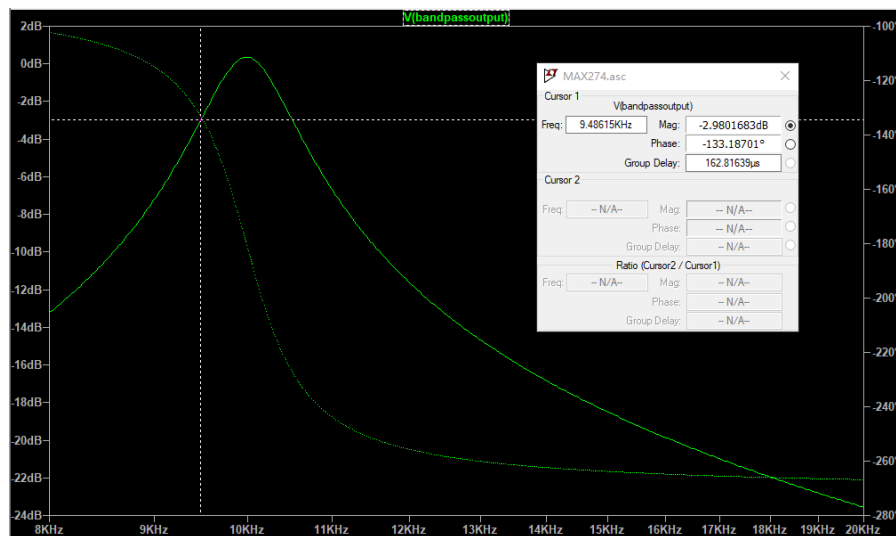


Figure 12

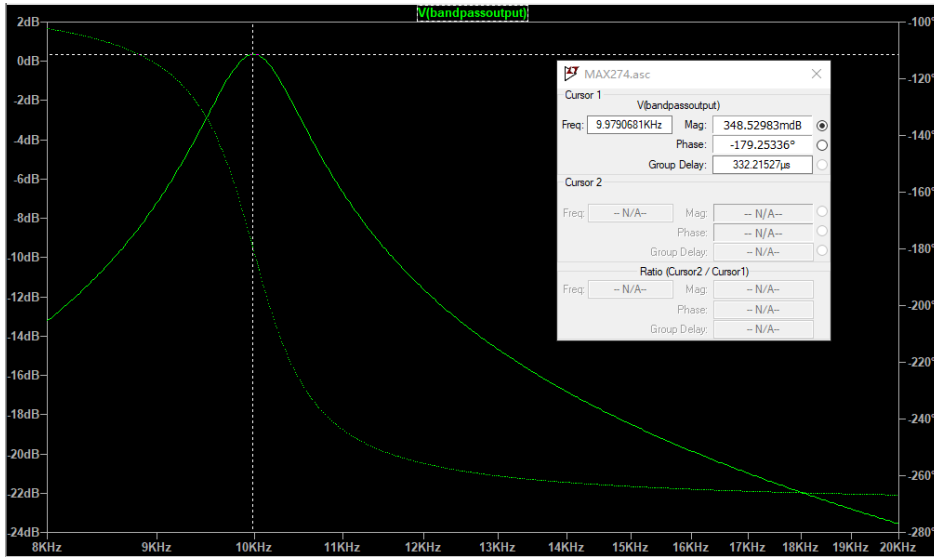


Figure 13

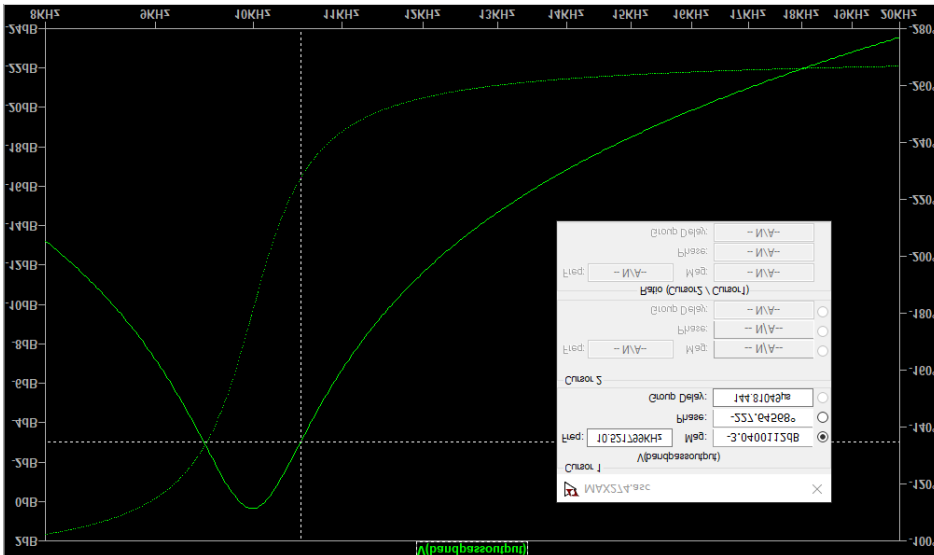


Figure 14

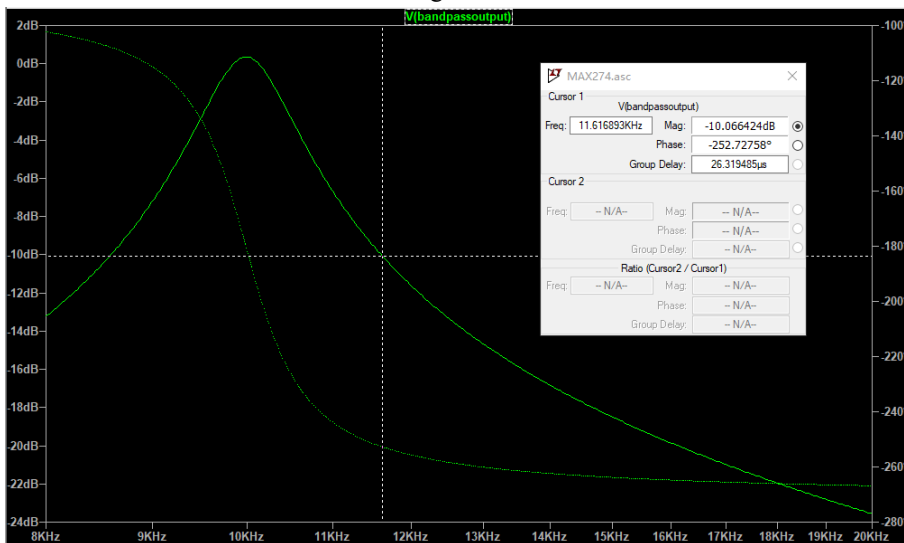


Figure 15

Question3

En appliquant les valeurs proposées par TD, on réalise ce montage du filtre passe-bande dans LTSpice. Et on fait des mesures et obtient : $f1'=8.55\text{KHz}$, $f1=9.44\text{ KHz}$, $f0=9.93\text{ KHz}$, $f2=10.42\text{ KHz}$, $f2'=11.53\text{ KHz}$.

Donc $B=0.98\text{ KHz}$, $B'=2.88\text{ KHz}$. Il fonctionne bien quand-même.

On constate qu'il y a un décalage de la fréquence centrale.

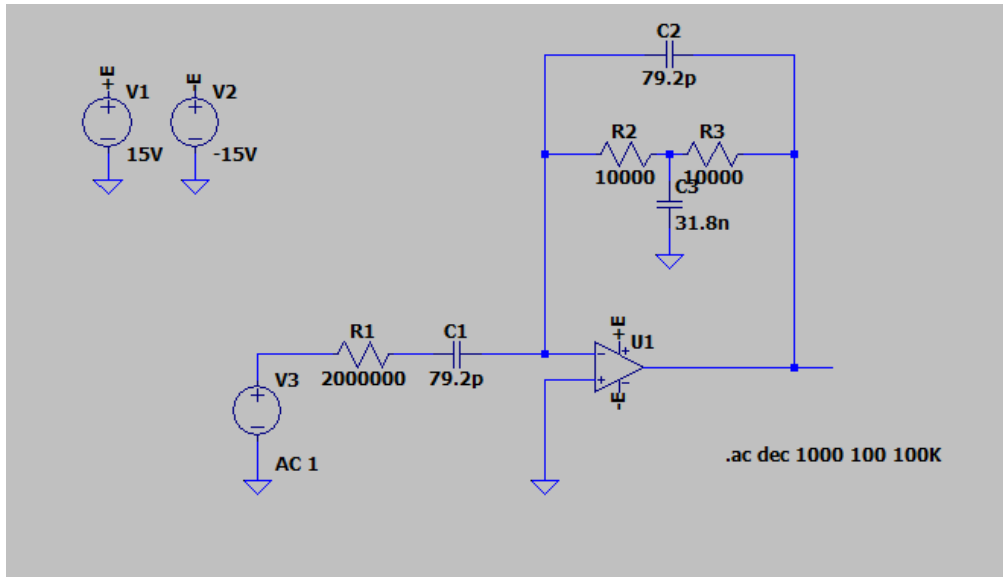


Figure 16

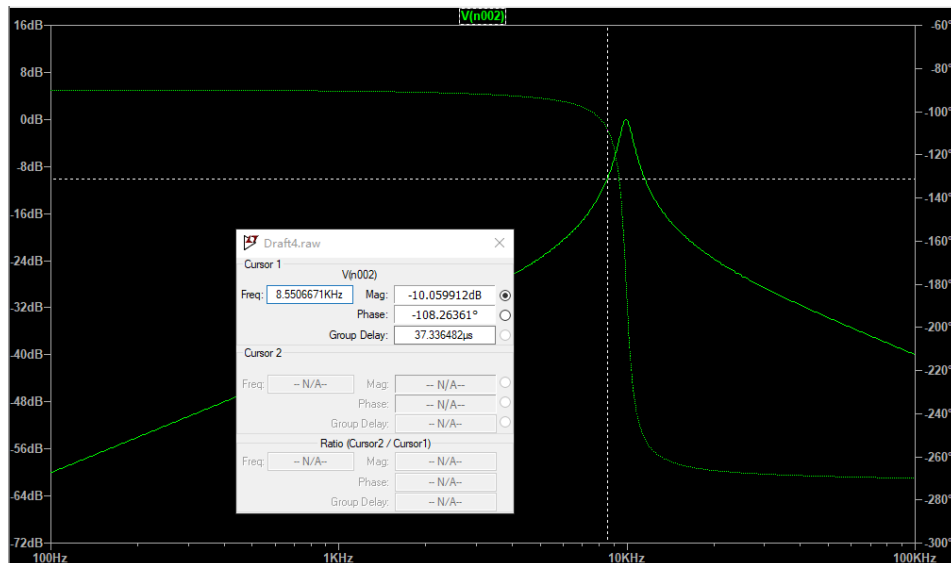


Figure 17

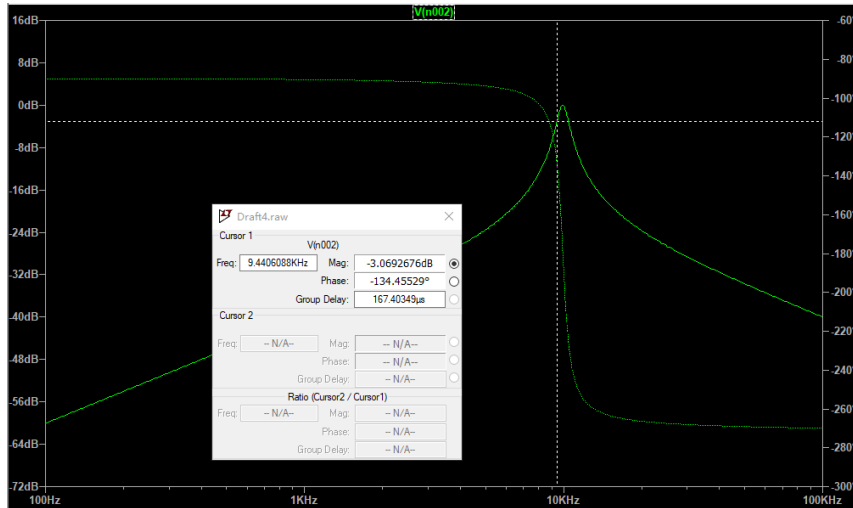


Figure 18

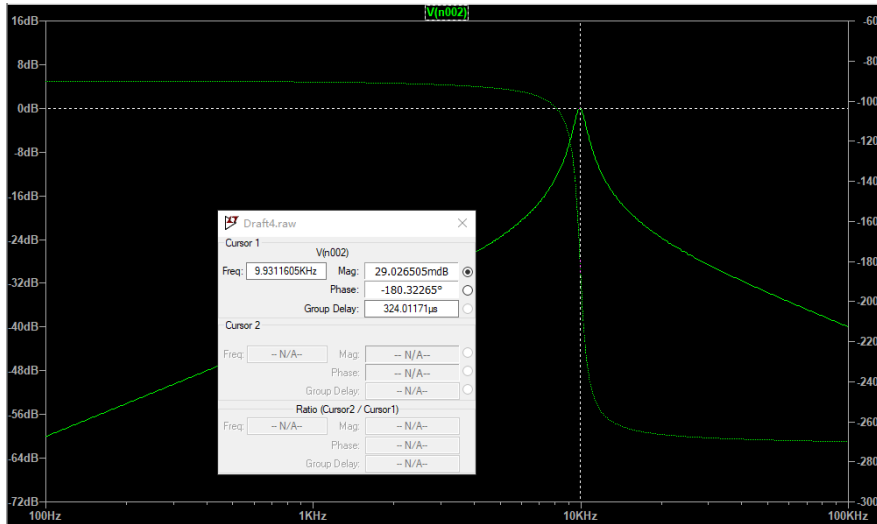


Figure 19

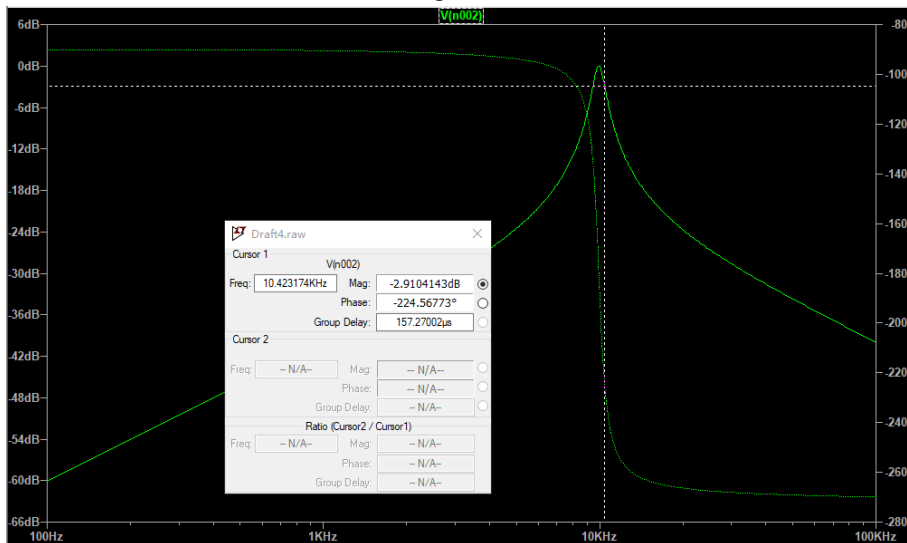


Figure 20

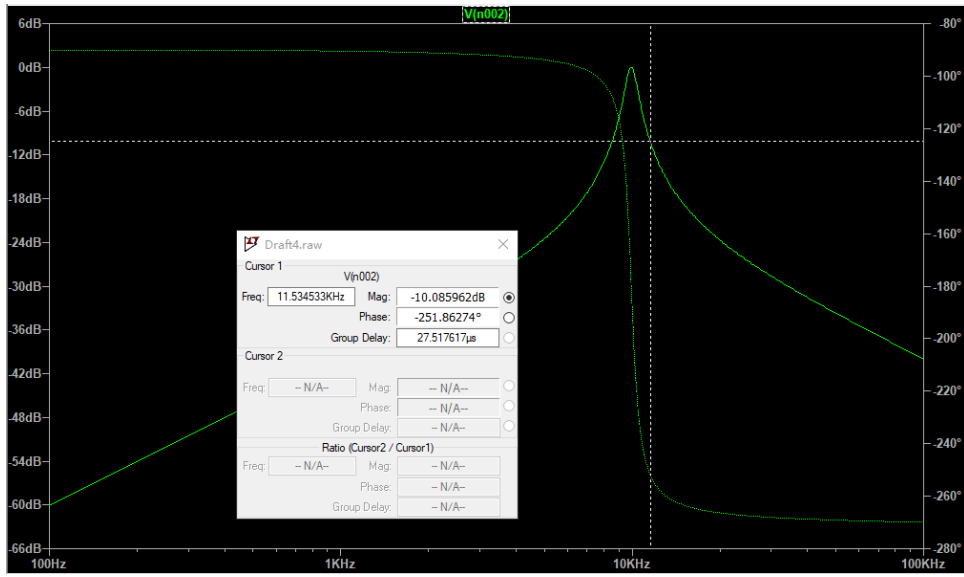


Figure 21