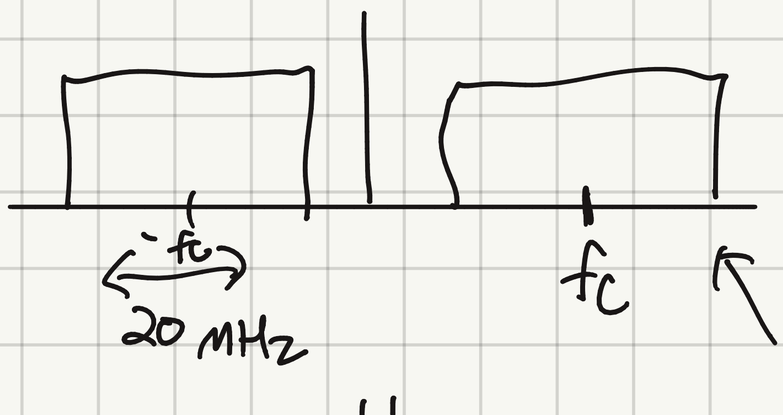
# Exam 2 Problem 2

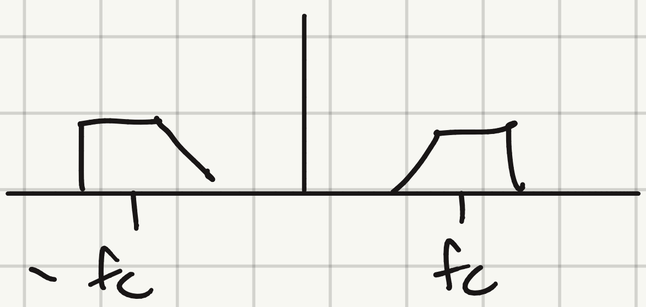
Original signal $f_c = L_1 = 1575.42\,MHz$
after $L_1$ and $L_2$ diivder

X




$L_1$ RF SAW filter

much bigger than Signal bandwidth

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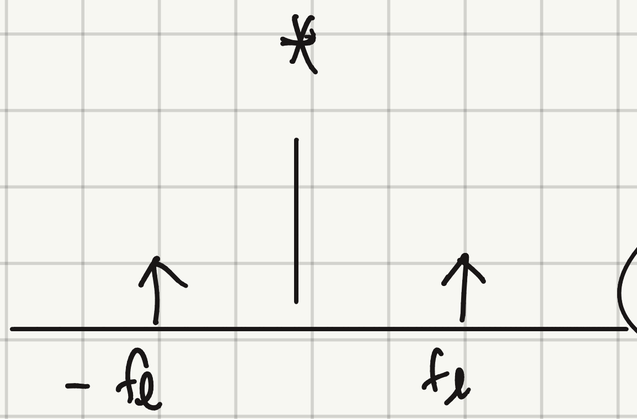
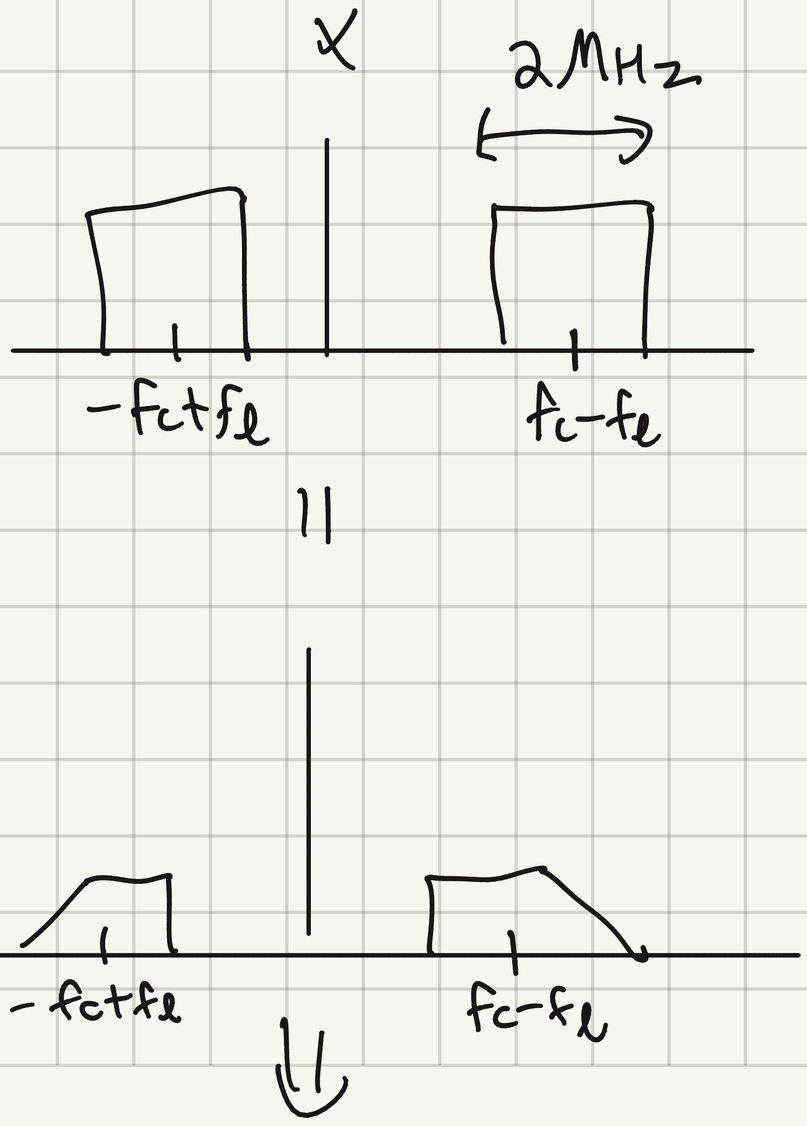


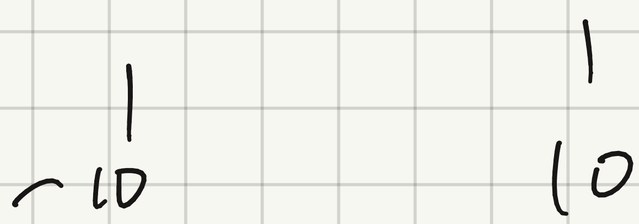

$f_\ell = 1276.\overline{6}\,MHz$
low-side mixy

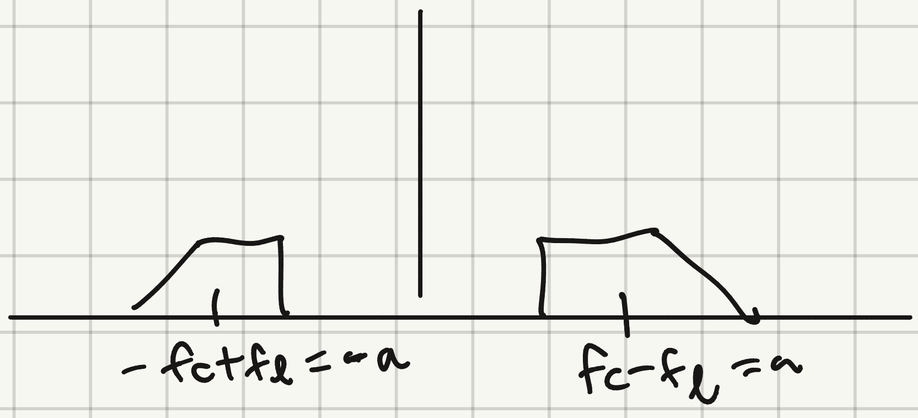

$f_c - f_\ell = 298.75\overline{3}$

X




$L_1$ IF SAW filter



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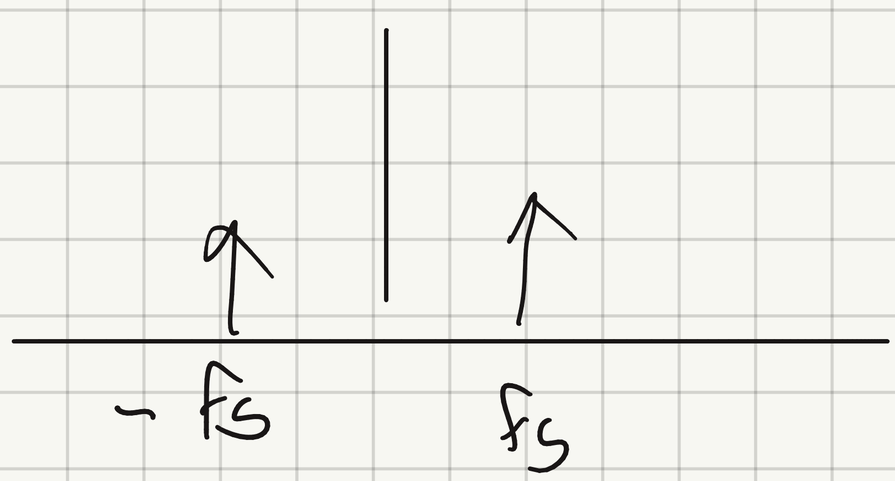
Sample at $\frac{40}{7}$ MHz.




$$f_{IF} = \left| a - f_s \cdot \left\lfloor \frac{a}{f_s} \right\rceil \right|$$

$$= \left| a - \frac{40}{7} \left\lfloor \frac{a}{\frac{40}{7}} \right\rceil \right|$$

$$\simeq 1.610476 \text{ MHz}$$