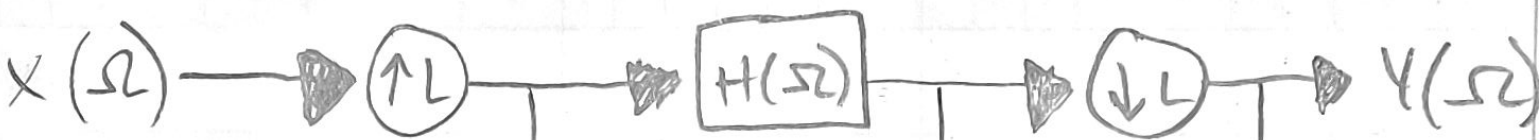

from eq. 6.74 on pg 389

$$X_{\uparrow}(\Omega) = X(L\Omega)$$

we know this is simply

$$H(\Omega) X_{\uparrow}(\Omega) = H(\Omega) X(L\Omega)$$

$$X_{\downarrow}(\Omega) = \frac{1}{M} \sum_{m=0}^{M-1} X\left(\frac{\Omega - 2\pi m}{M}\right)$$

eq. 6.68 pg 384

or

$$Y(\Omega) = \frac{1}{L} \sum_{l=0}^{L-1} X\left(\Omega - 2\pi l\right) H\left(\frac{\Omega - 2\pi l}{L}\right)$$

As long as $X(L\Omega)H(\Omega)$ meets the requirement $B \leq \frac{\pi}{L}$ (where B is bandwidth) there should be no spectral overlap