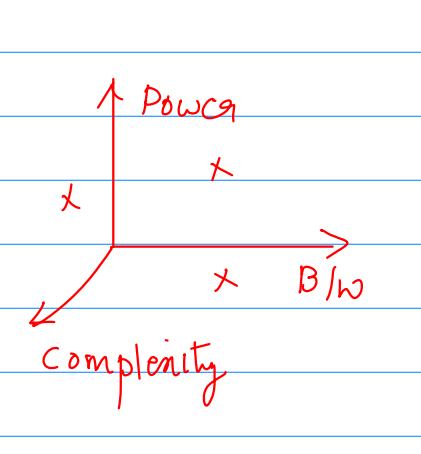
Review

1) Transmission power
2) Transmission BW
3) receiver complexity
4) Signal to noise ratio

} refined with those additional constraints.

DSBSC, Plain AM (LC-AM)

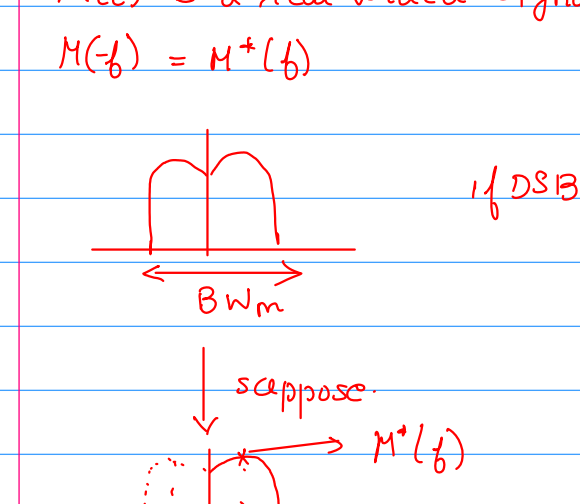
Tx power : LC-AM > DSBSC
B/W : LC-AM = DSBSC
SNR : ?
Rx complexity : LC-AM < DSBSC

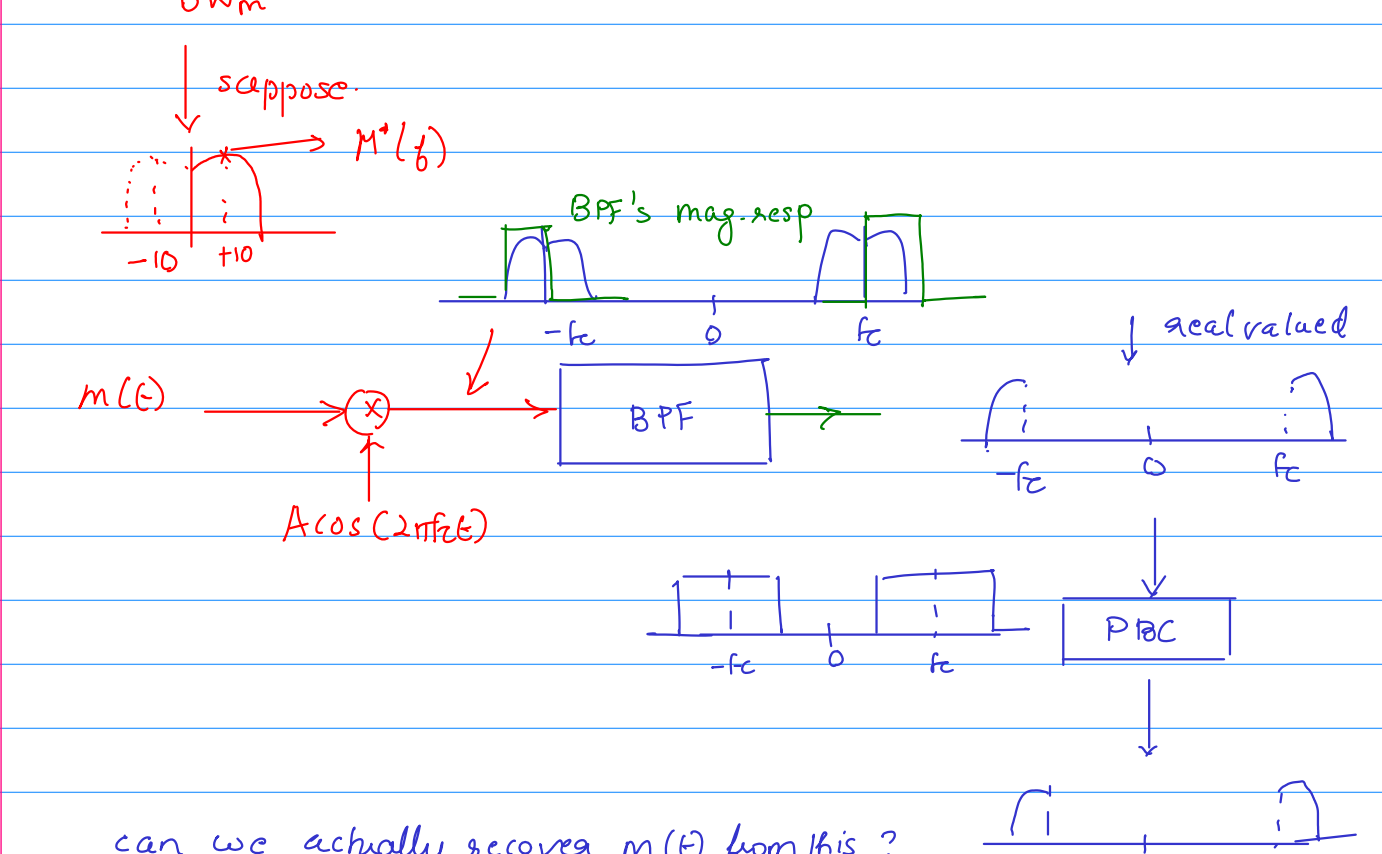


Single sideband modulation (demodulation) (SSB)

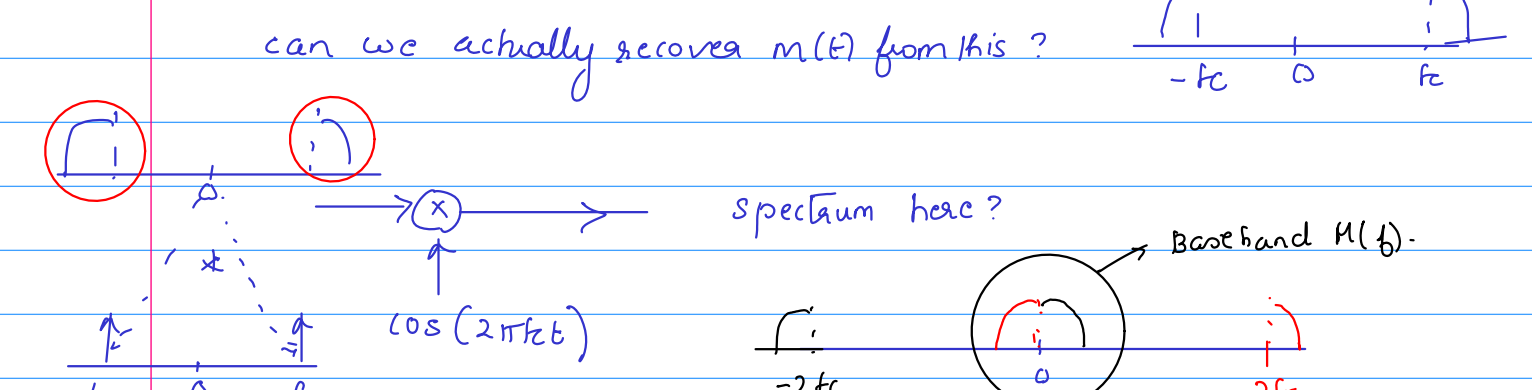
m(t) is a real valued signal
$M(f) = M^*(f)$

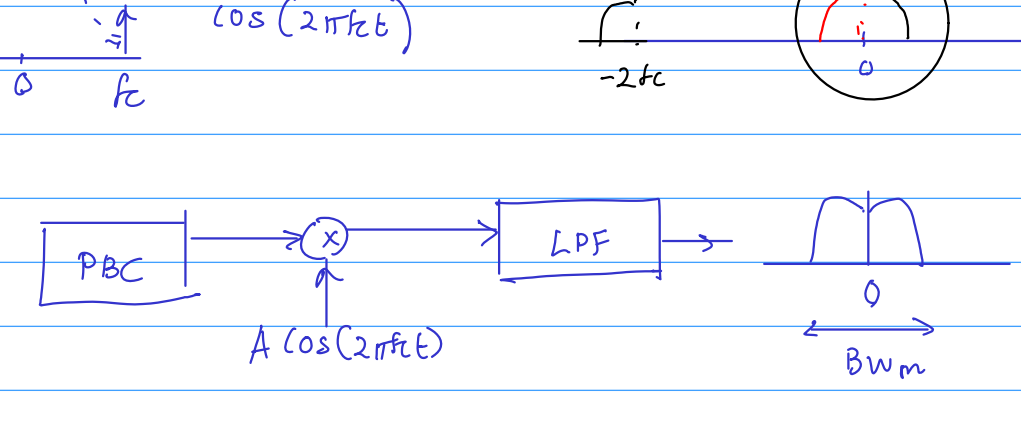
If DSBSC then pb signal has 2sided B/W of $2BW_m$.



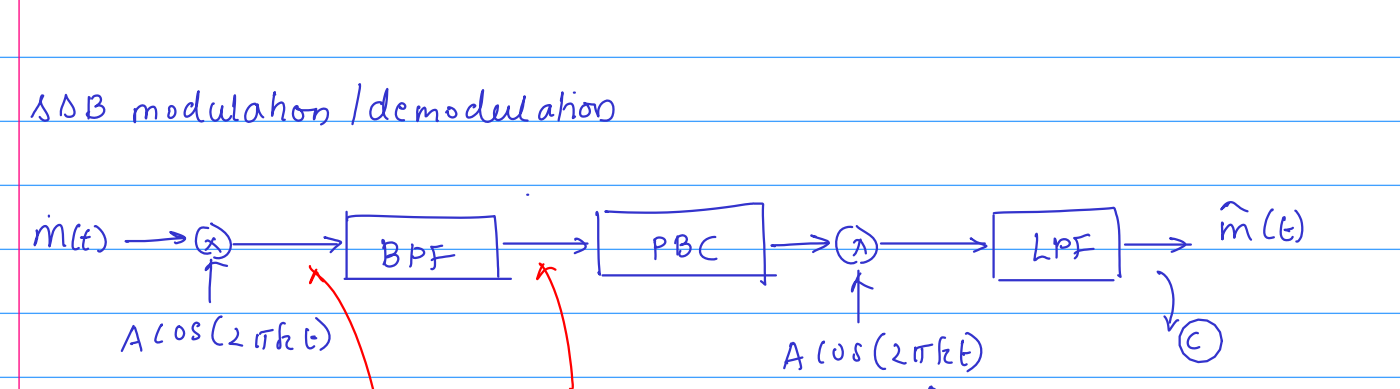


can we actually recover m(t) from this?

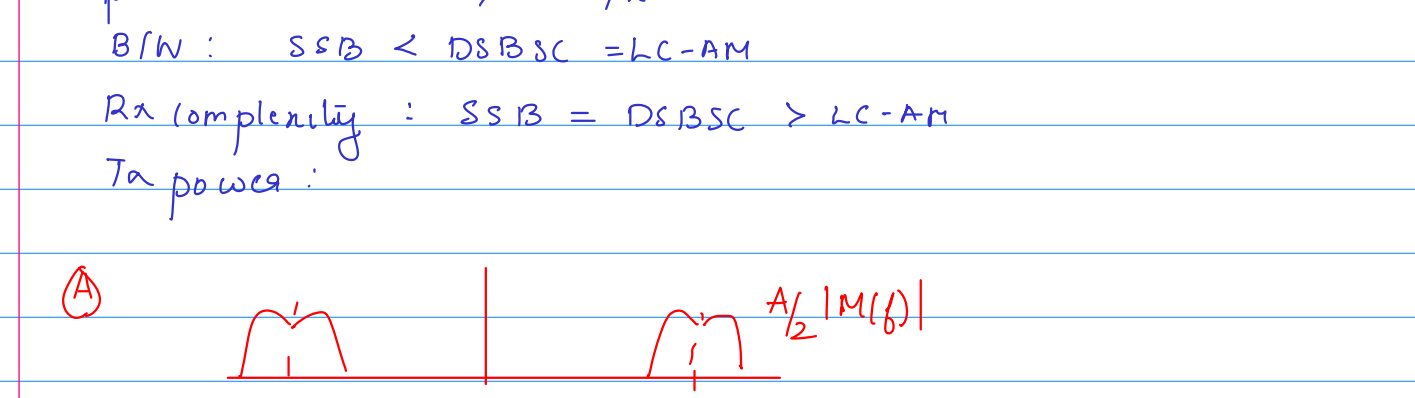


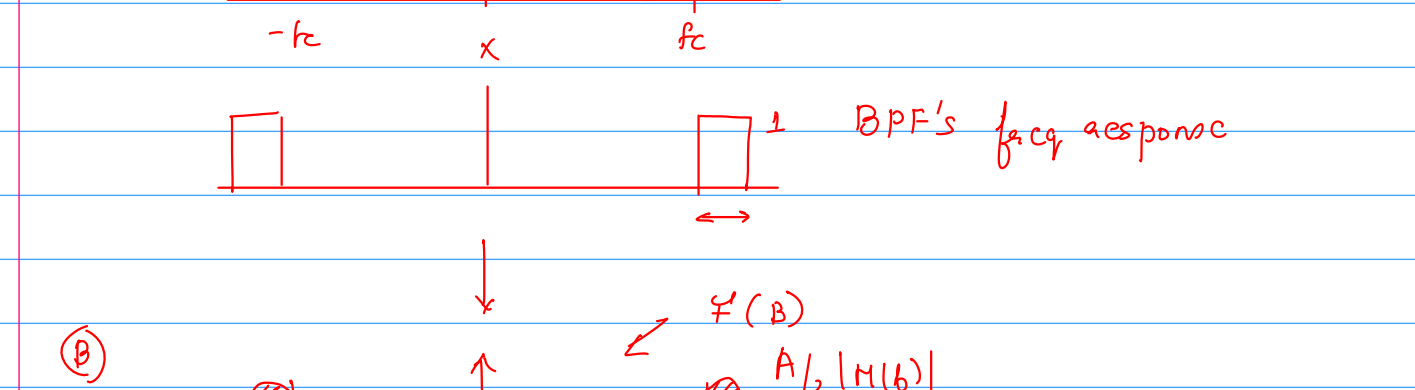


SSB modulation / demodulation



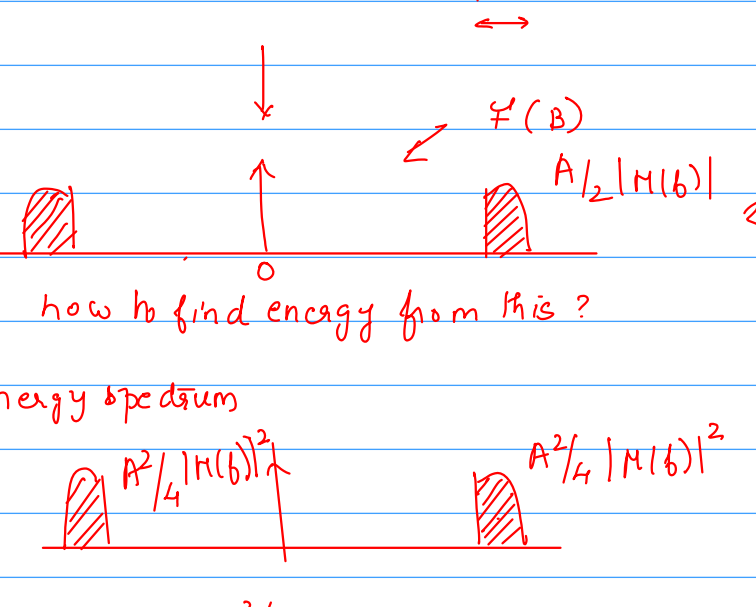
comparison between SSB, DSBSC, LC-AM
B/W : SSB < DSBSC = LC-AM
Rx complexity : SSB = DSBSC > LC-AM
Tx power :





how to find energy from this?

energy spectrum



energy = $A^2/4 \, E_m$

power = $A^2/4 \, (E_m/T_m)$

recall for DSB? $A^2/2 \, (E_m/T_m)$

H/W : what will be the transmit power for SSB if the signal (C) has to be the same for DSB and SSB (assume ideal filtering).