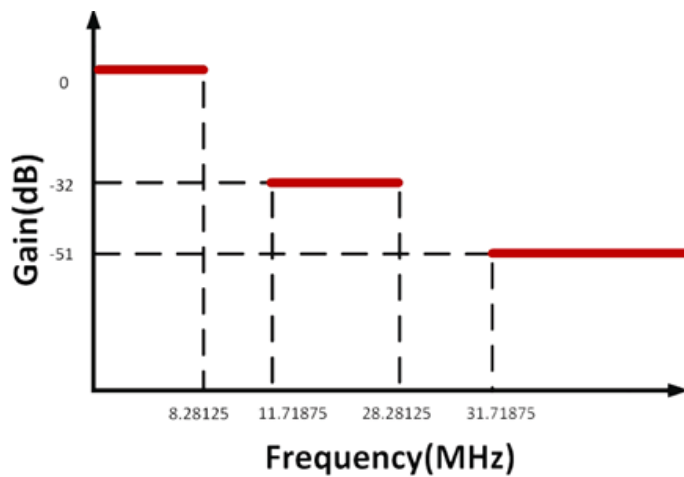
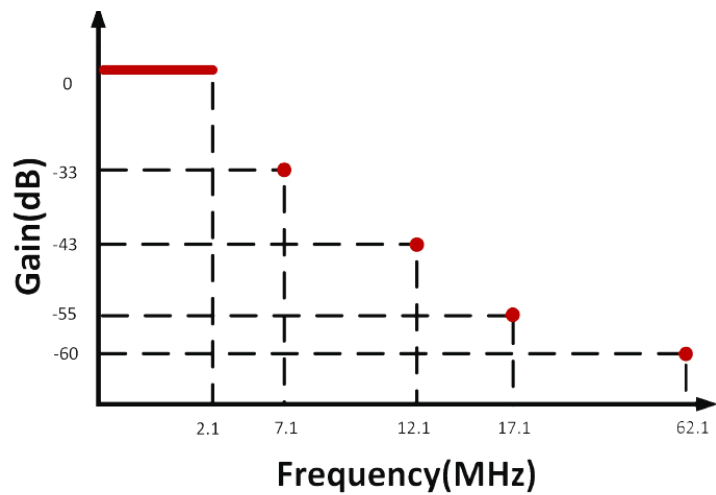
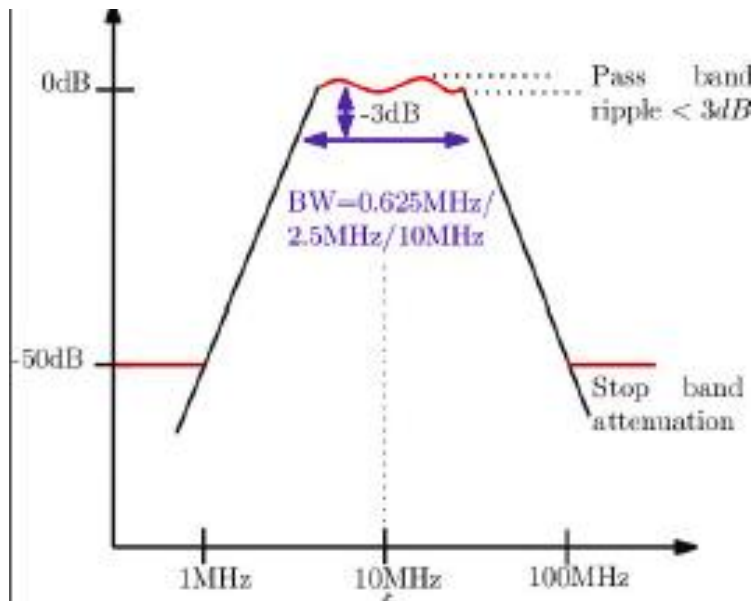


HOMWORK ASSIGNMENT 4

Problem 1. a) Obtain the $H(s)$ using inverse Chebyshev approximation that meet the specs shown in the 3 magnitude vs frequency plots.:





Summarize the factorized results assuming blocks that are cascaded with first and second order, indicate order, Max Q and Min Q for each spec, as well as settling time for a step input.

b) Obtain also for the first specs the corresponding Butterworth and Elliptic approximations. Provide a summary table describing the three approximations and ranking them according to the maximum Qs.

Problem 2. Provide an OTA-C implementation of the inverse Chebychev approximation of prob. 1b)

- i) Use ideal OTAs and plot its response in the frequency and time domain.
- ii) Use OTAs with a excess phase for 1degree and 5 degrees, employ macromodels
- iii) Use a passive compensation for the OTA-C integrators and plot the results.

Summarize your results in a table form and discuss them.