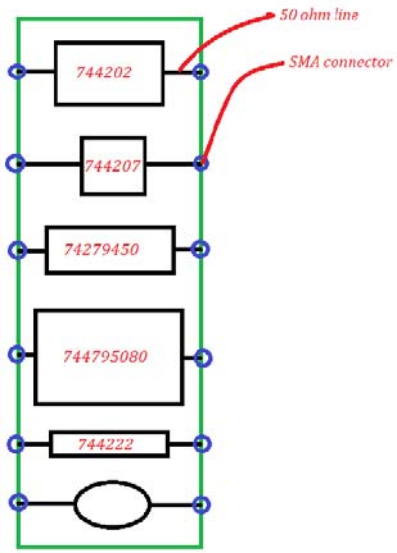
Task

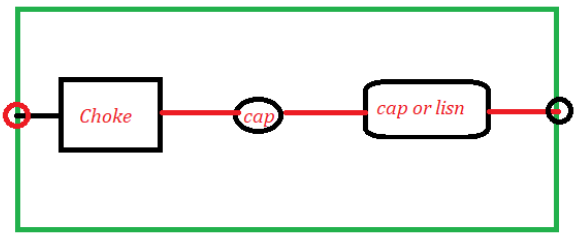
1. Simulate common mode and differential mode using Choke instead of INDK
2. Varying the parameters simulate the cutoff frequency from 1MHz to above.
3. Identify the S parameter of real time Choke given by professor (744202, 744207, 744221, 744222, 744224, 744226, 74279404, 74279450, 74279451, 74279452, 744795080, 744795051)
4. Use these S parameters and simulate the filter circuit.

Approaches

1. Have simulated the circuit and used coupled inductor (choke) putting different values.
2. Varied the value of Differential mode capacitor (at pF range)
3. Used the S parameter instead of lumped element (ATC multilayer ceramic capacitor 100 pF)
4. Tried to identify the S parameter of the given Choke but failed. Not even got any equivalent circuit. Eventually there are LT and PSP file which are given as embedded format that cannot be used for library purpose.
5. Identified some possible ways to get the S parameters.
    a. We can make a PCB board where we can align chokes and provide 50 ohm line with every choke and set SMA connector with every choke. Then using vector network analyzer we can measure S parameter of that specific choke. As we have choke and footprint, we can easily built a 2 layer PCB using FR4 material.



    b. Using the de embedding process we can easily measure the specific choke where we can use the remain PCB for other testing.



    c. Or we can built both of circuit in the same PCB.