

sisaphilip@gmail.com

Question 1 soln

a. Yes, marker m1 is pointing to the right frequency.

Proof;

left IM3 is given by $2f_1 - f_2$, $f_1 = 1.945\text{GHz}$ and $f_2 = 2.11\text{ GHz}$

$$\begin{aligned}\text{IM3} &= 2(1.945) - 2.11 \\ &= 1.78\text{ GHz}\end{aligned}$$

b. Resolution bandwidth (RBW), It can be lowered to reduce noise by averaging out more of it over narrow bandwidth.

f_1 has power of 43.237 dbm and IM3 has -22.301
the dBc is the difference of this values

$$43.237 - (-22.301) = 65.538\text{ dBc} \Rightarrow -65.538\text{ dBc}$$

which is lower than -153dBc confirming compliance