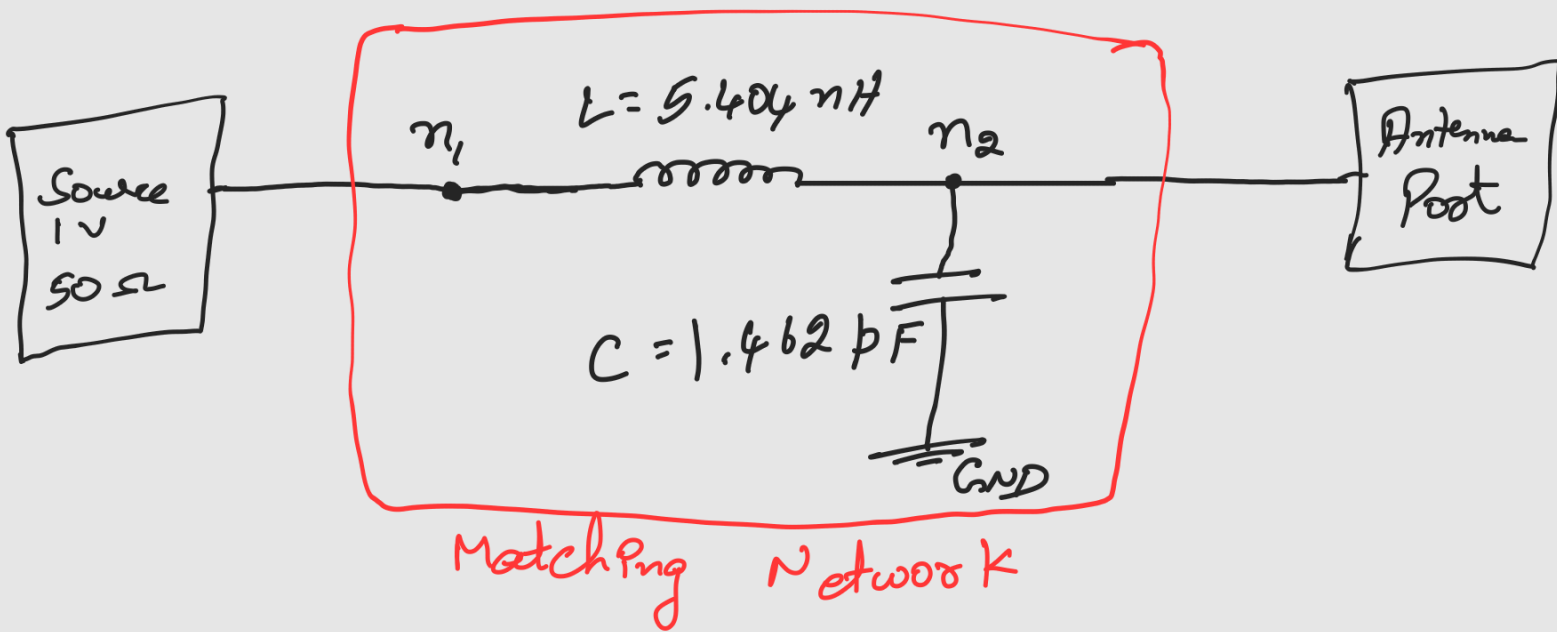


DIPOLE ANTENNA \rightarrow 900 MHz

The resonant Frequency is 900 MHz.

For impedance, matching circuit can be added to have impedance match to 50 ohms.



For the above circuit,

$$Z_L = 68.5 - j2.98 \text{ ohms};$$

$$Z_0 = 50 \text{ ohms};$$

$$f = 900 \text{ MHz}$$

$$y = Z_0 / Z_L = 0.728 + 0.0316j$$

$$g = 0.728 \quad b = 0.0316$$

$$L = \frac{Z_0 \sqrt{g' - 1}}{2\pi f} = \underline{\underline{5.404 \text{ nH}}}$$

$$C = \frac{-b + \sqrt{g - g^2}}{2\pi f Z_0} = \underline{\underline{1.462 \text{ pF}}}$$

dipole resonant at almost $L \approx \lambda/2$ & $f = 900 \text{ MHz}$.

After iterating the final length chosen was,

$$L = 0.161528 \text{ m}$$

$$\text{dipole length} \propto \frac{1}{f_r}$$

