

$$f_0 := 6.22\text{kHz} \quad j := \sqrt{-1} \quad \underline{\underline{C}} := 1\text{nF} \quad \underline{\underline{R}} := \frac{1}{2 \cdot \pi \cdot C \cdot f_0} = 2.559 \times 10^4 \Omega \quad R1 := R \quad R2 := R$$

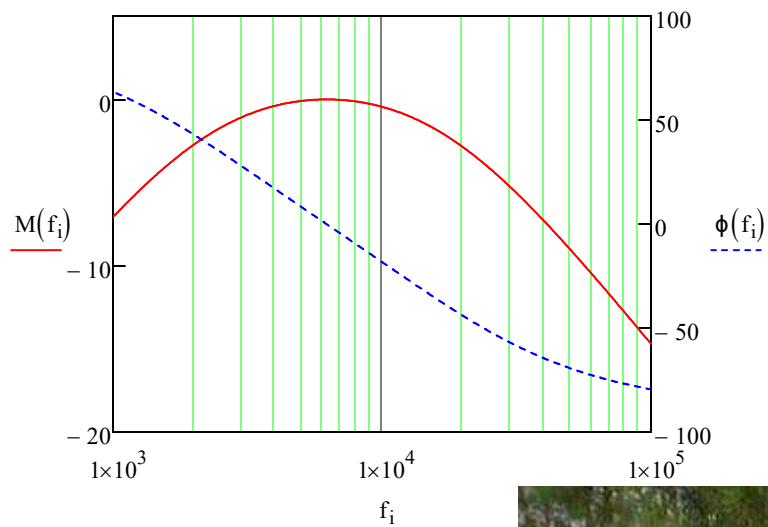
$$R3 := 20\text{k}\Omega \quad R4 := 10\text{k}\Omega \quad \underline{\underline{K}} := 1 + \frac{R3}{R4} = 3 \quad C1 := C \quad C2 := C$$

Wein Bridge Oscillator

$$\underline{\underline{T}}(f) := K \cdot \frac{j \cdot 2 \cdot \pi \cdot f \cdot R \cdot C}{(j \cdot 2 \cdot \pi \cdot f \cdot R \cdot C)^2 + K \cdot (j \cdot 2 \cdot \pi \cdot f \cdot R \cdot C) + 1}$$

$$f_{\text{start}} := 100\text{Hz} \quad f_{\text{stop}} := 100\text{kHz} \quad \underline{\underline{N}} := 1024 \quad i := 0..N-1 \quad f_i := f_{\text{start}} \cdot \left(\frac{f_{\text{stop}}}{f_{\text{start}}} \right)^{\frac{i}{N-1}}$$

$$M(f) := 20 \cdot \log(|T(f)|) \quad \phi(f) := \frac{180}{\pi} \cdot \arg(T(f))$$



"\\Client\\C\$\\Users\\caleb_000\\Documents\\Y3S1\\ECE3043"

\meimage.jpg"