My current method

$$C_1 := 1\ \mu F \cdot (1 \pm 20\ \%) = \begin{cases} 1.2 \\ 0.8 \end{cases} \mu F \qquad L_1 := 1\ \mu H \cdot (1 \pm 5\ \%) = \begin{cases} 1.05 \\ 0.95 \end{cases} \mu H$$

$$F_1 := \frac{1}{\sqrt{L_1 \cdot C_1}} = \begin{cases} 890.8708 \\ 936.5858 \\ 1091.0895 \\ 1147.0787 \end{cases} kHz$$

$$\text{for } i := 1, i \le 4, i := i + 1$$
$$F_{1M_{i\,1}} := F_{1_i}$$

$$F_{1Range} := \left(\frac{\max\left(F_{1M}\right) + \min\left(F_{1M}\right)}{2} \right) \pm \left(\frac{\max\left(F_{1M}\right) - \min\left(F_{1M}\right)}{2} \right) = \begin{cases} 1147.0787 \\ 890.8708 \end{cases} kHz$$

Proposed Method

$C_2 := 1\ \mu F \quad Tol_{C2} := 20\ \%$ $\qquad L_2 := 1\ \mu H \quad Tol_{L2} := 5\ \%$

$$F_1 := \frac{1}{\sqrt{L_2 \cdot C_2}} \cdot \left(1 \pm \sqrt{{Tol_{C2}}^2 + {Tol_{L2}}^2}\right) = \begin{cases} 1206.1553 \\ 793.8447 \end{cases} kHz$$

Error progagation Method

Measures and errors $C_2 := 1\ \mu F$ $\Delta C_2 := 20\ \% \cdot C_2$ $L_2 := 1\ \mu H$ $\Delta L_2 := 5\ \% \cdot L_2$

Only for show $C_2 \pm \Delta C_2 = \begin{cases} 1.2 \\ 0.8 \end{cases} \mu F$ $L_2 \pm \Delta L_2 = \begin{cases} 1.05 \\ 0.95 \end{cases} \mu H$

Propagation of errors: given the functional dependency z=f(x,y) the error Δz is

$$\Delta z = \left| \frac{d}{d\,x} f(x, y) \right| \cdot \Delta x + \left| \frac{d}{d\,y} f(x, y) \right| \cdot \Delta y$$

In your case: $F(C, L) := \frac{1}{\sqrt{L \cdot C}}$ $F_2 := F(C_2, L_2) = 1000\ kHz$

$$\Delta F_2 := \left| \frac{d}{d\,C_2} F(C_2, L_2) \right| \cdot \Delta C_2 + \left| \frac{d}{d\,L_2} F(C_2, L_2) \right| \cdot \Delta L_2 = 125\ kHz$$

Finally $\boxed{F_2 \pm \Delta F_2 = \begin{cases} 1125 \\ 875 \end{cases} kHz}$

As percent of the value $\Delta\%F_2 := \frac{\Delta F_2}{F_2} = 12.5\ \%$

You can put that as procedures

$$Err(X) := \left\| \begin{array}{l} \Delta x := 0.5 \cdot (X_1 - X_2) \\ \left[X_1 - \Delta x \quad \Delta x \right] \end{array} \right.$$

$$Err(f(1), X) := \left\| \begin{array}{l} \left[x \quad \Delta x \right] := Err(X) \\ \left| \frac{d}{d\,x} f(x) \right| \cdot \Delta x \end{array} \right.$$

$$Err(f(2), X, Y) := \left\| \begin{array}{l} \left[\left[x \quad \Delta x \right] := Err(X) \ \left[y \quad \Delta y \right] := Err(Y) \right] \\ \left| \frac{d}{d\,x} f(x, y) \right| \cdot \Delta x + \left| \frac{d}{d\,y} f(x, y) \right| \cdot \Delta y \end{array} \right.$$

$$Err(f(3), X, Y, Z) := etc$$

Then $\Delta F_2 := Err\left(F(C, L), C_2 \pm \Delta C_2, L_2 \pm \Delta L_2\right) = 125\ kHz$

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