Chapter 2, Exercise 2.1(a, b, c):

$\boxed{\text{1(a) answer: The effect is negliable}}$

$\boxed{\text{1(b) answer: The effect is negliable}}$

$\boxed{\text{1(c) answer: The effect is non-negliable}}$

For 1a:
The circuit need to account for the effect from transmission line if $\frac{l}{\lambda} < 0.1$. In this case, since $\lambda = \frac{c}{f} = 1.5E9$, $\frac{l}{\lambda}$ is much less than 0.1. The effect from the transmission line can be ignored.
For 1b:
The circuit need to account for the effect from transmission line if $\frac{l}{\lambda} < 0.1$. In this case, since $\lambda = \frac{c}{f} = 5000E3$, $\frac{l}{\lambda}$ is 0.01, which is less than 0.1. The effect from the transmission line can be ignored.
For 1c:
The circuit need to account for the effect from transmission line if $\frac{l}{\lambda} < 0.1$. In this case, since $\lambda = \frac{c}{f} = 0.5$, $\frac{l}{\lambda}$ is 0.4, which is greater than 0.1. The effect from the transmission line can not be ignored.

Chapter 2, Exercise 2.2(a):

$\boxed{\text{R'} = 0.787\frac{\Omega}{m},\ \text{G'} = 0.009\frac{S}{m},\ \text{C'} = 3.61 \times 10^{-10}\frac{F}{m}}$

The hidden parameter not disclosed in the problem is $\mu_o = \mu = 4\pi 10^{-7}$. To find R', R_s need to be calculated:

$$R_s = \sqrt{\frac{\pi f \mu_c}{\sigma_c}} = 0.008$$

Then R' is calculated as follow: R' $= \frac{R_s}{2\pi} \times (\frac{1}{a} + \frac{1}{b}) \Rightarrow 0.787\frac{\Omega}{m}$
Then G' and C' are calculated as follow:
G' $= \frac{2\pi\sigma}{\ln\frac{b}{a}} \Rightarrow 0.009\frac{S}{m}$
C' $= \frac{2\pi\epsilon_r\epsilon_o}{\ln\frac{b}{a}} \Rightarrow 3.61 * 10^{-10}\frac{F}{m}$

Chapter 2, Exercise 2.4a:

$$\boxed{\text{R'} = 1.375\ \frac{\Omega}{m},\ \text{L'} = 1.5 \times 10^{-7}\frac{H}{m},\ \text{G'} = 0,\ \text{C'} = 1.84 \times 10^{-10}\frac{F}{m}}$$

Using the known variables given from the problems, R_s can be calculated to be 0.00825 Ω. Then R' can be calculated using the formula $\frac{2R_s}{w}$. The L', G', and C' are all calculated using from what was given from the problem directly.

Chapter 2, Exercise 2.5:

$$\boxed{\alpha = 0.016\ \frac{Np}{m},\ \beta = 33.67\frac{Rad}{m},\ Z_o = 31.16 - 0.014j\Omega,\ u_p = 1.8 \times 10^8\frac{m}{s}}$$

Since all the transmission line parameters are given on 2.5, we can find α, β, Z_o, u_p easily using their equations.

Chapter 2, Exercise 2.7:

$\boxed{\alpha = 0.0075,\ \beta = 67.47,\ u_p = 1.8 \times 10^8\,\mathrm{m\,s^{-1}},\ Z_o = (253 - 0.02\mathrm{i})\,\Omega}$

From problem 2.2, we know that R' = $3.71\,\Omega\,\mathrm{m}^{-1}$, L' = $1.36 \times 10^{-6}\,\mathrm{H\,m^{-1}}$, G' = $1.847 \times 10^{-6}\,\mathrm{S\,m^{-1}}$, and C' = $2.12 \times 10^{-11}\,\mathrm{F\,m^{-1}}$. And therefore α, β, u_p, Z_o can be calculated using these parameters.

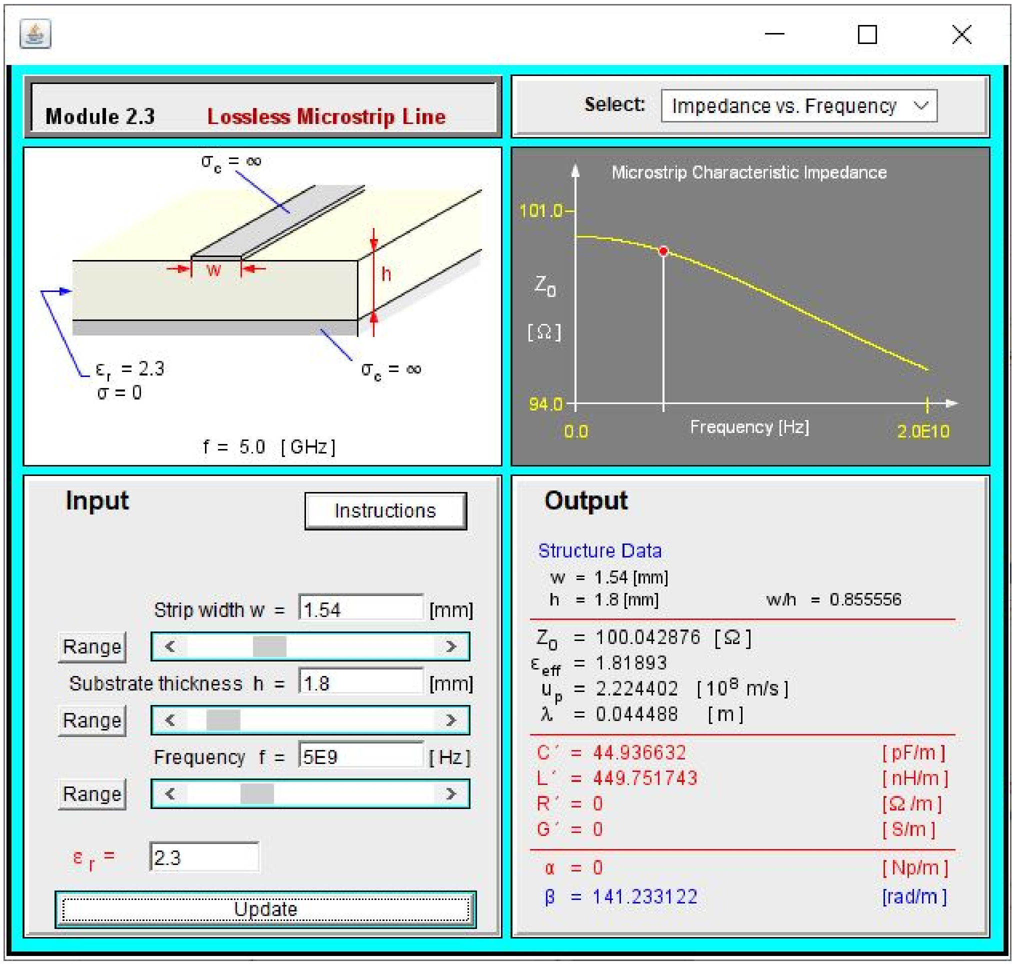
Chapter 2, Exercise 2.9:

$$\boxed{\epsilon_{eff} = 1.84,\ Z_o = 192\,\Omega,\ \beta = 284\,\mathrm{rad\,m^{-1}}}$$

Student's work goes here

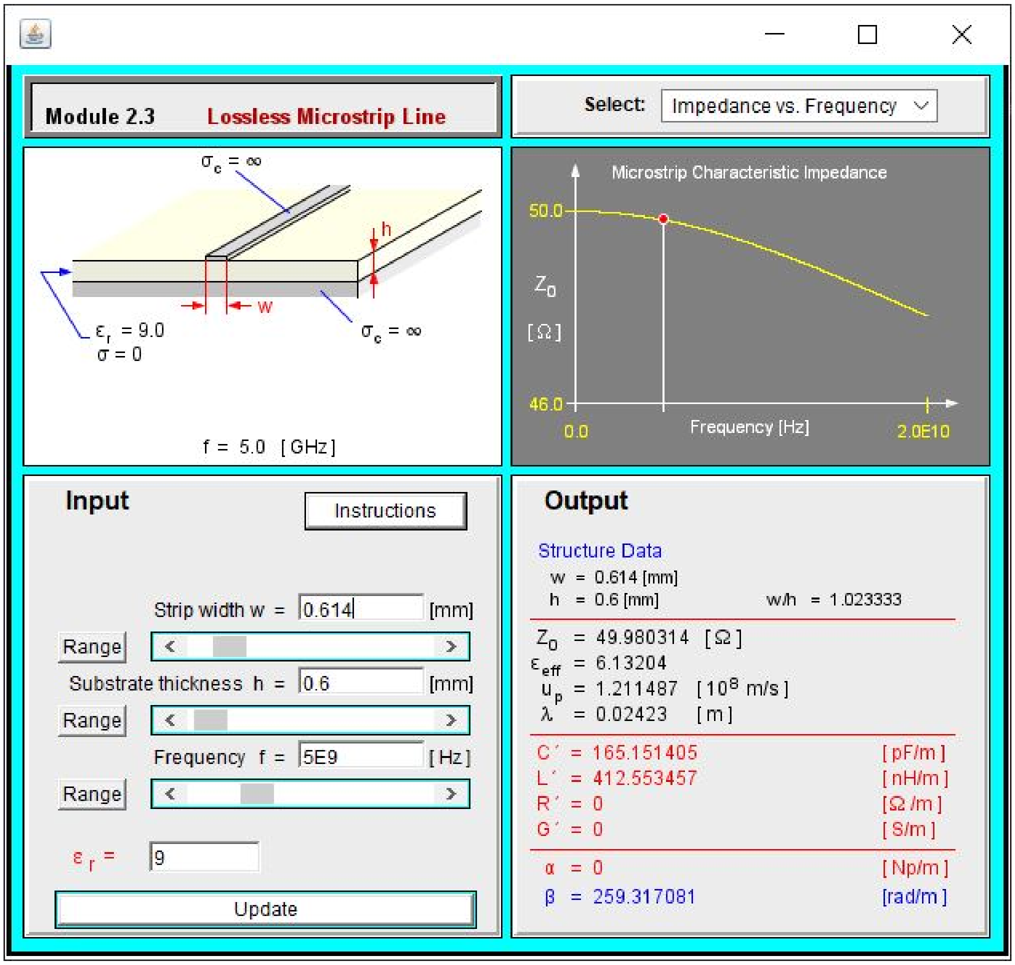
Chapter 2, Exercise 2.10:

$\boxed{\text{Strip width (w)} = 1.54\,\text{mm, wavelength } (\lambda =) 0.044\,48\,\text{m}}$



Chapter 2, Exercise 2.11:

$\boxed{\text{Strip width (w)} = 0.614\,\text{mm}}$



EXTRA CREDIT: Rosen 1.2, Exercise 36(a):

$\boxed{\text{final answer here}}$

Student's work goes here