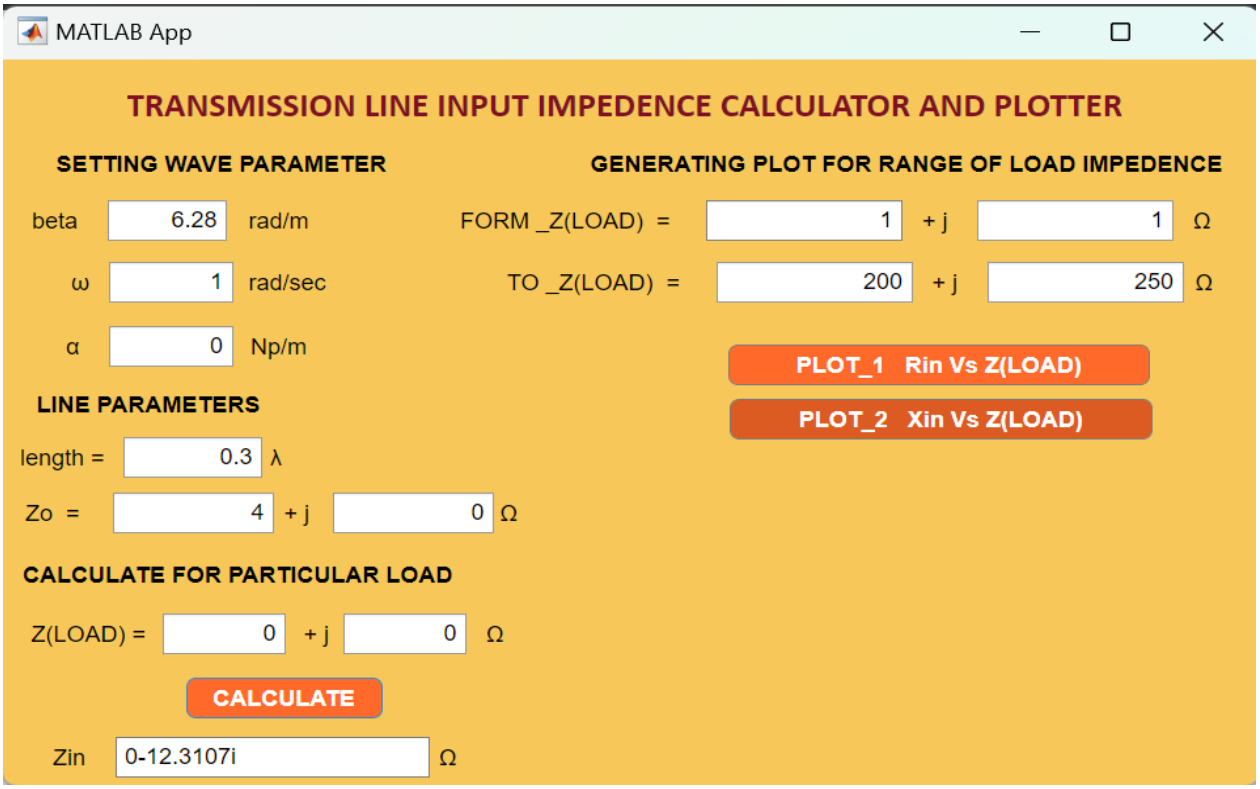
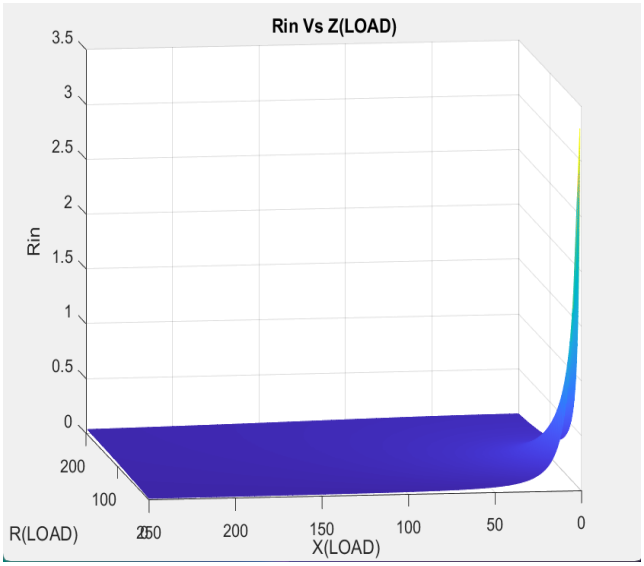
EE 305 Project Results

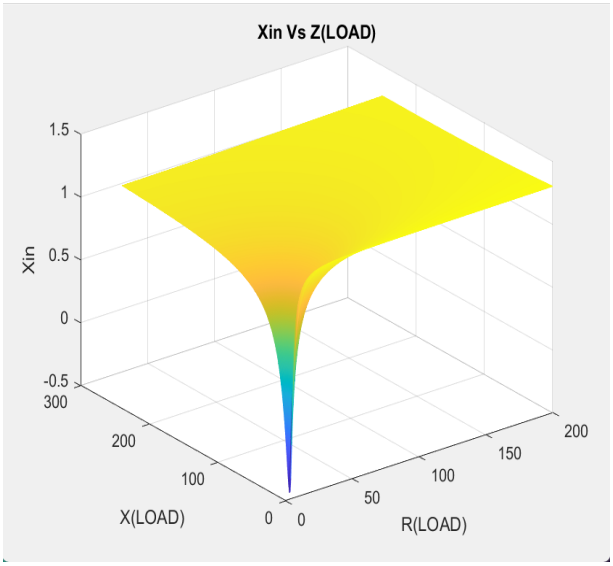
Group 9

Lossless Case α=0:

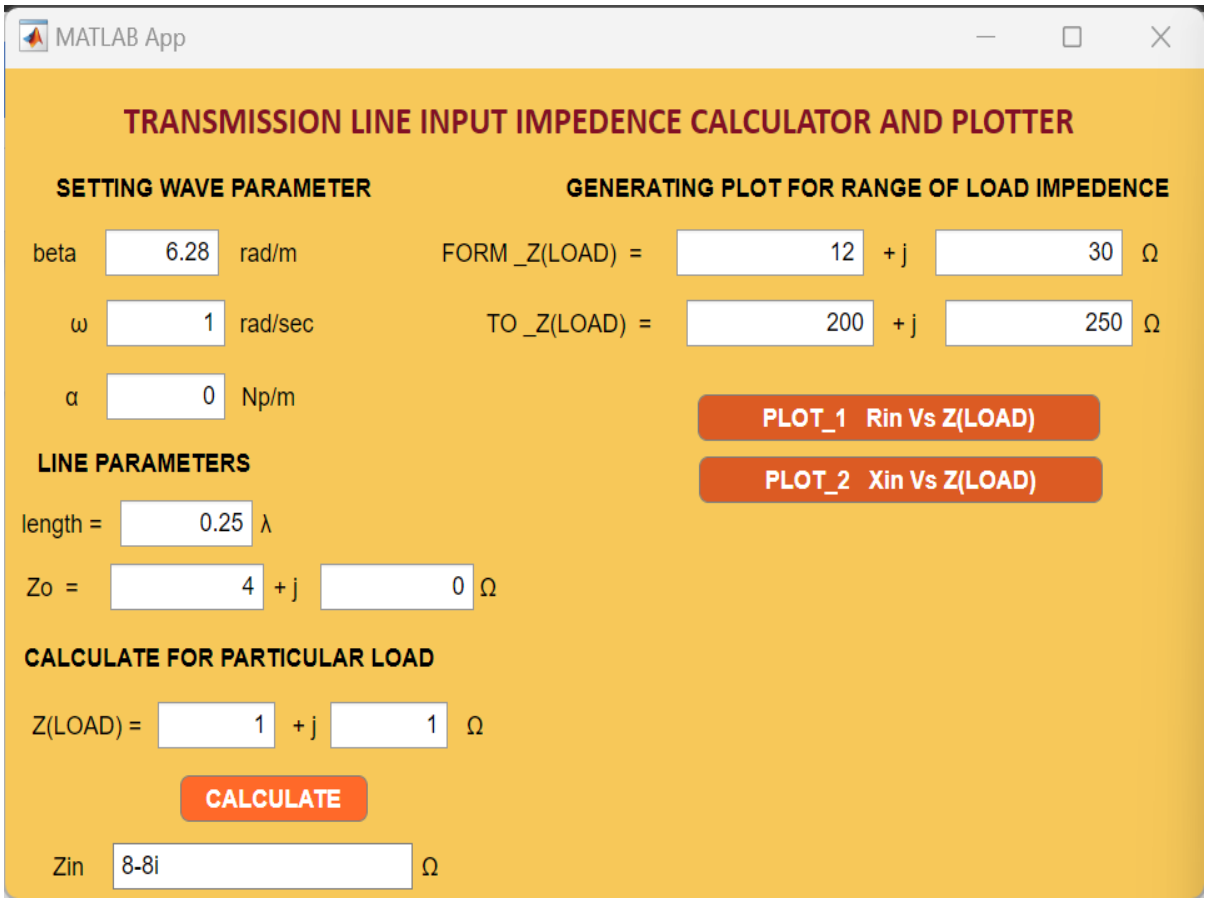
1.Short Circuit Case (Z=0)

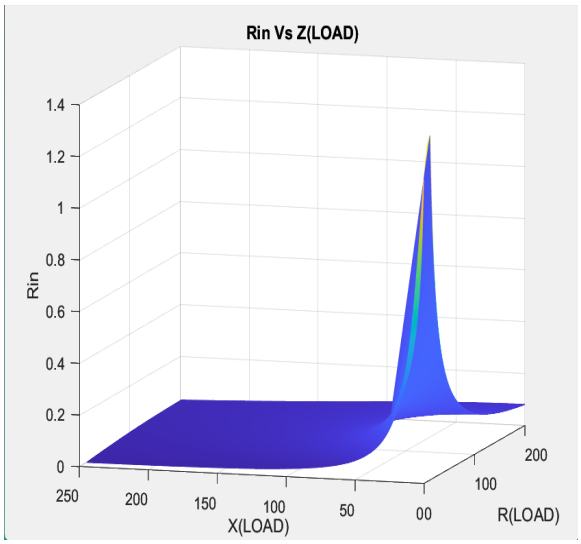


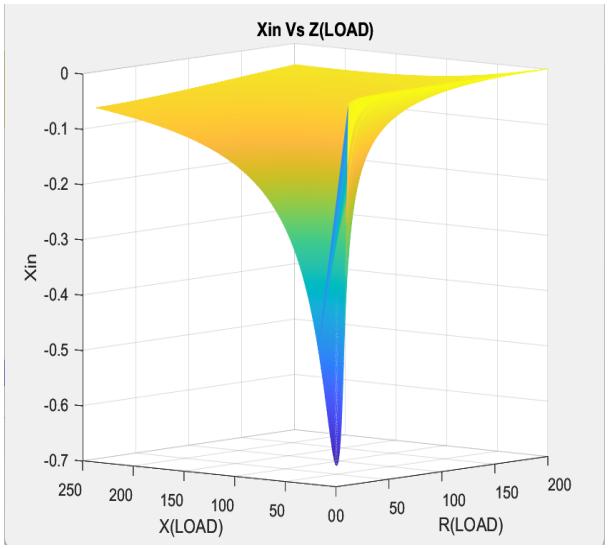




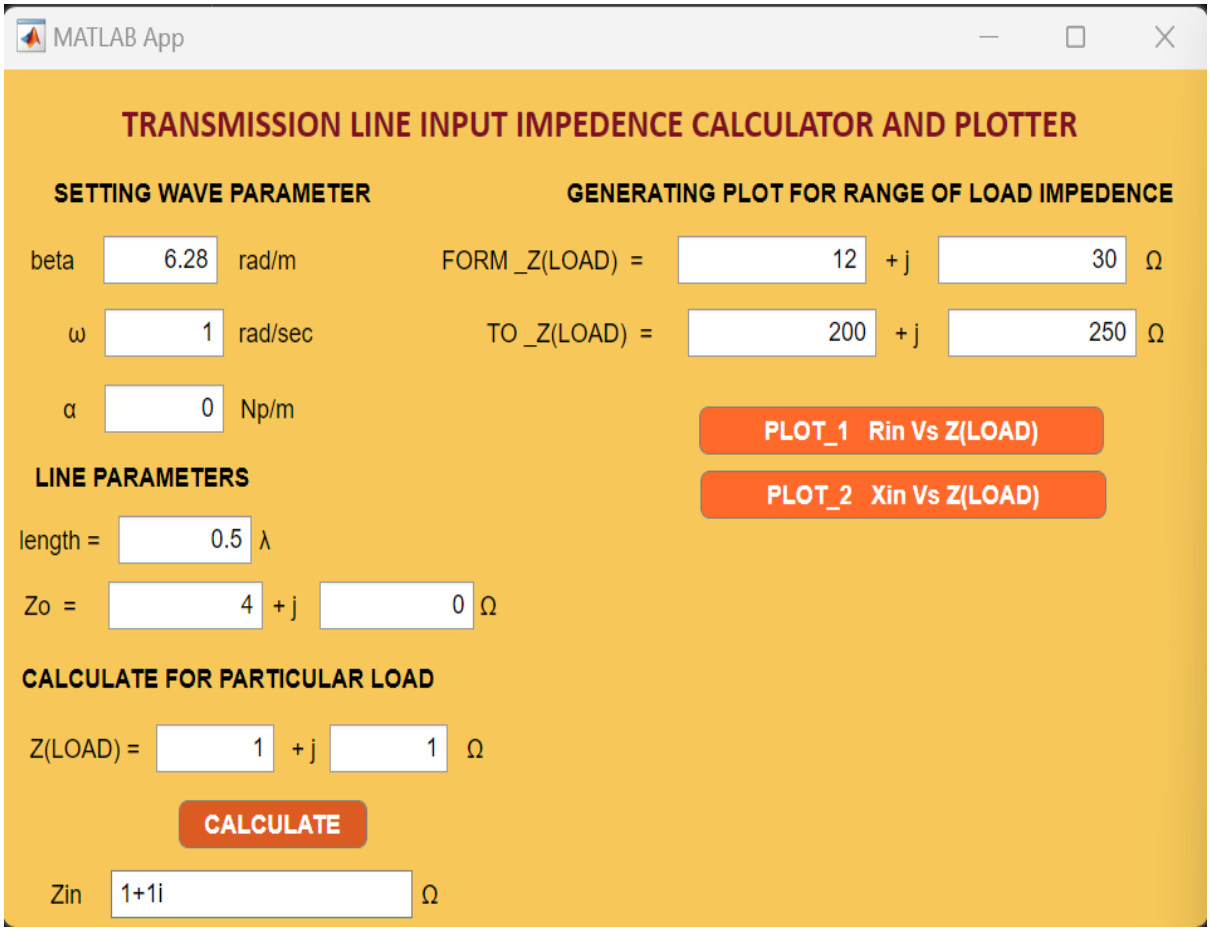
2. Quarter-wave sections (l = $\boldsymbol{\lambda}$/4, $\boldsymbol{\beta}$l= $\boldsymbol{\pi}$/2)

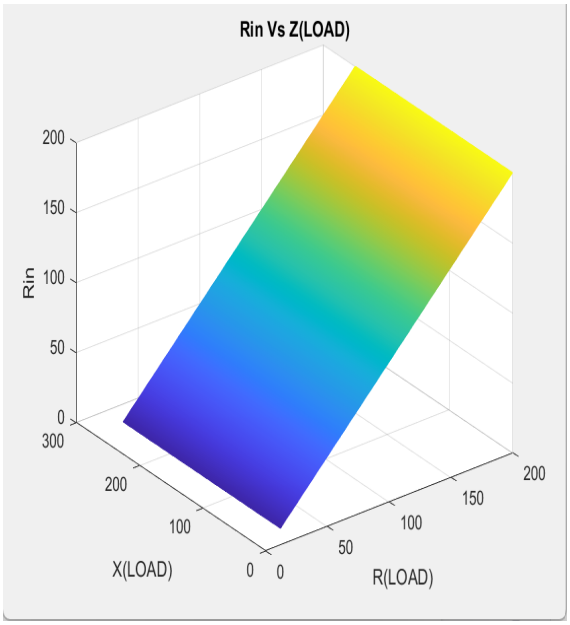


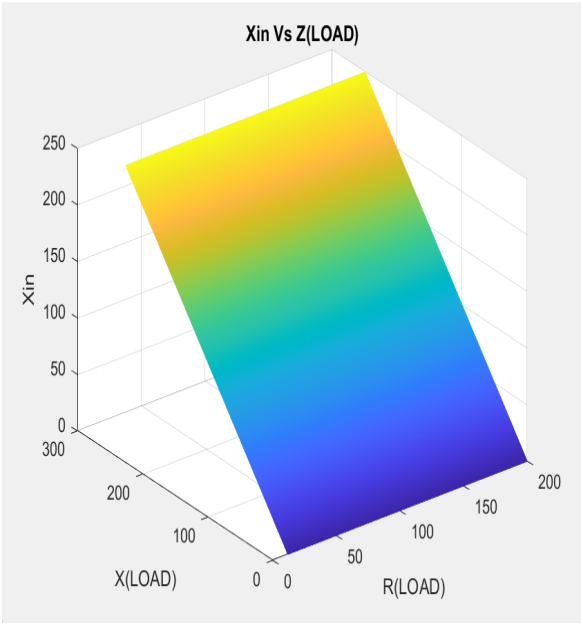




3. Half-wave sections (l = $\lambda/2$, $\beta l = \pi$)







Lossy Case α≠0:

MATLAB App

TRANSMISSION LINE INPUT IMPEDENCE CALCULATOR AND PLOTTER

SETTING WAVE PARAMETER

beta 3.14 rad/m

ω 1 rad/sec

α 2 Np/m

LINE PARAMETERS

length = 0.3 λ

Zo = 1 + j 4 Ω

CALCULATE FOR PARTICULAR LOAD

Z(LOAD) = 2 + j 5 Ω

CALCULATE

Zin 0.89264+3.9731i Ω

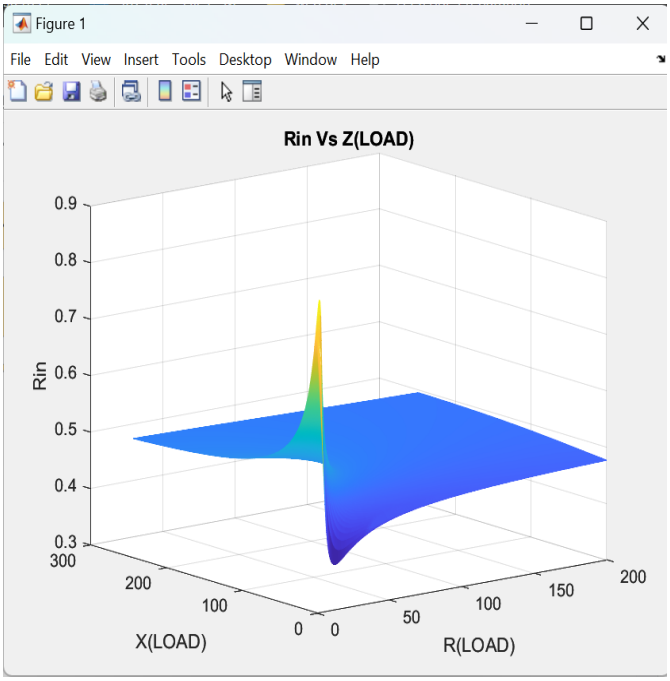
GENERATING PLOT FOR RANGE OF LOAD IMPEDENCE

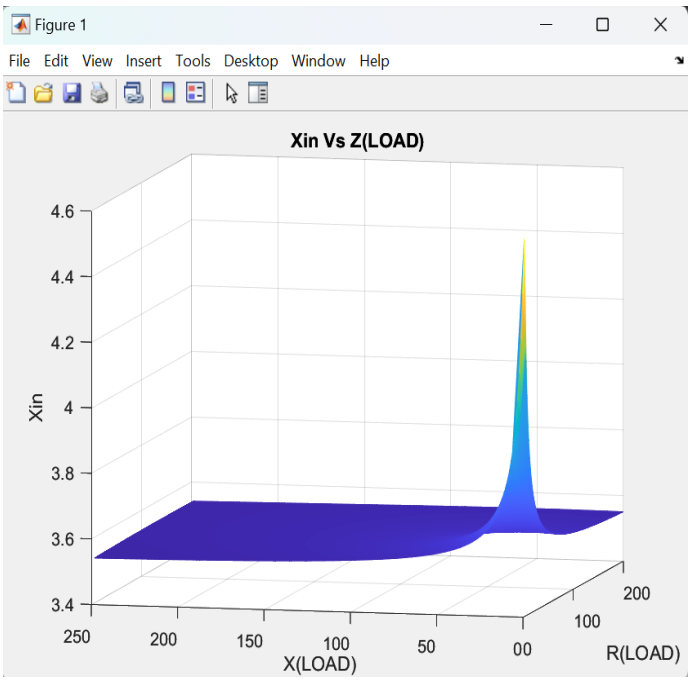
FORM _Z(LOAD) = 3 + j 7 Ω

TO _Z(LOAD) = 200 + j 250 Ω

PLOT_1 Rin Vs Z(LOAD)

PLOT_2 Xin Vs Z(LOAD)





1. Short Circuit and Quarter-wave(ZL=0, l = λ/4)

MATLAB App

TRANSMISSION LINE INPUT IMPEDENCE CALCULATOR AND PLOTTER

SETTING WAVE PARAMETER

beta 3.14 rad/m

ω 1 rad/sec

α 1.4 Np/m

LINE PARAMETERS

length = 0.25 λ

Zo = 1 + j 2 Ω

CALCULATE FOR PARTICULAR LOAD

Z(LOAD) = 0 + j 0 Ω

CALCULATE

Zin 1.654+3.308i Ω

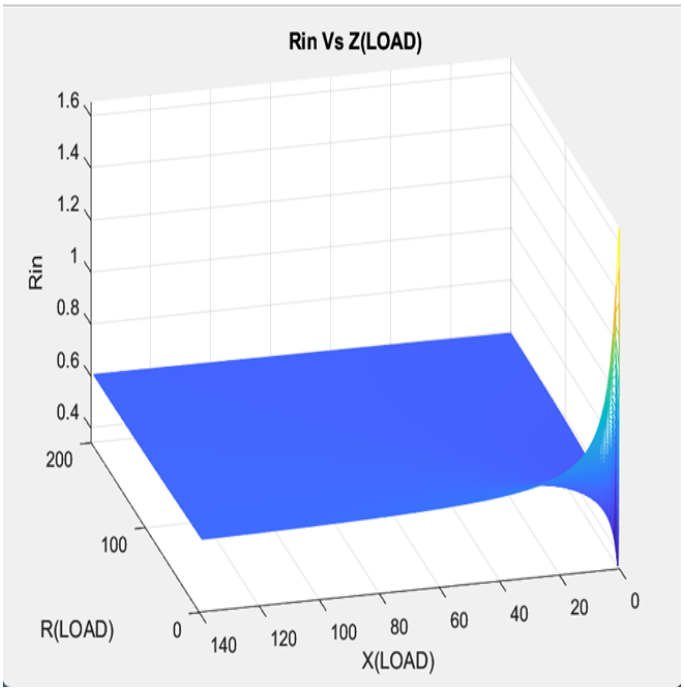
GENERATING PLOT FOR RANGE OF LOAD IMPEDENCE

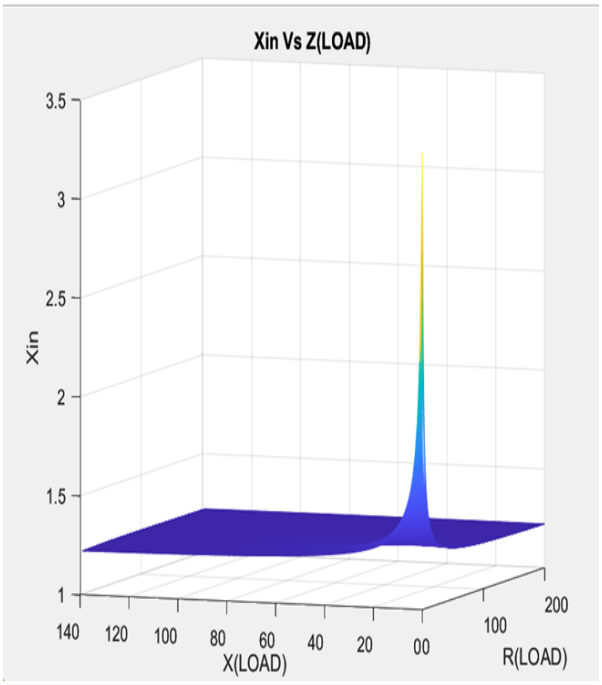
FORM _Z(LOAD) = 0 + j 0 Ω

TO _Z(LOAD) = 200 + j 140 Ω

PLOT_1 Rin Vs Z(LOAD)

PLOT_2 Xin Vs Z(LOAD)





2.Short Circuit and Half-wave(ZL=0, l = λ/4)

MATLAB App

TRANSMISSION LINE INPUT IMPEDENCE CALCULATOR AND PLOTTER

SETTING WAVE PARAMETER

beta 3.14 rad/m

ω 1 rad/sec

α 1.4 Np/m

LINE PARAMETERS

length = 0.5 λ

Zo = 1 + j 2 Ω

CALCULATE FOR PARTICULAR LOAD

Z(LOAD) = 0 + j 0 Ω

CALCULATE

Zin 0.88551+1.771i Ω

GENERATING PLOT FOR RANGE OF LOAD IMPEDENCE

FORM _Z(LOAD) = 0 + j 0 Ω

TO _Z(LOAD) = 200 + j 140 Ω

PLOT_1 Rin Vs Z(LOAD)

PLOT_2 Xin Vs Z(LOAD)