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No.
Date.

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微波工程期末

3. 解:

$$1). \rho = \frac{1+|S_{11}|}{1-|S_{11}|} = \frac{1+0.6}{1-0.6} = 4.$$

$$2). L = \frac{1}{|T|^2} = \frac{1}{|S_{21}|^2} = \frac{1}{0.64} = 1.56.$$

$$\phi = \arg S_{21} = \arg(0.8) = 0$$

$$[S^+] = \begin{bmatrix} -0.6j & 0.8 \\ 0.8 & -0.6j \end{bmatrix}, [S^+][S] = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

\therefore 网络为无耗.

(3). 由 $S_{21}' = S_{21} \cdot e^{-j\theta}$ 得

$$0.8j = 0.8 \cdot e^{-j\theta} \Rightarrow |\theta|_{\min} = \frac{\pi}{2}, \theta = -\frac{\pi}{2}.$$

$$\therefore \begin{cases} S_{11}' = S_{11} = 0.6j. \\ S_{22}' = S_{22} \cdot e^{-j2\theta} = -0.6j. \\ S_{12}' = S_{12} \cdot e^{-j\theta} = 0.8j. \end{cases}$$

$$\therefore [S'] = \begin{bmatrix} 0.6j & 0.8j \\ 0.8j & -0.6j \end{bmatrix}.$$

输出端参考面
 \therefore 左内移电长度为 $\frac{\pi}{2}$