

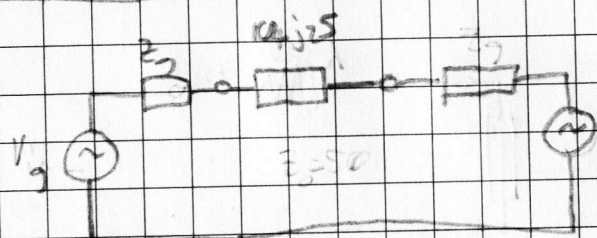
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Substrates

| | FR-4 | Duroid 5880 | Duroid 6006 | Duroid 6010.2 |
|---------------|--------|-------------|-----------------|-----------------|
| ϵ_r | 4.70 | 2.20 | 6.15 ± 0.15 | 10.2 ± 0.25 |
| $\tan \delta$ | 0.0280 | 0.0004 | 0.0027 | 0.0023 |

Connector Mating

| | Type N | SMA | 3.5 mm | 2.92 mm | 2.4 mm | 1.8 mm |
|---------|--------|-----|--------|---------|--------|--------|
| Type N | Y | N | N | N | N | N |
| SMA | N | Y | Y | Y | N | N |
| 3.5 mm | N | Y | Y | Y | N | N |
| 2.92 mm | N | Y | Y | Y | N | N |
| 2.4 mm | N | N | N | N | Y | Y |
| 1.8 mm | N | N | N | N | Y | Y |



$$[A] = \begin{bmatrix} 1 & 10 + j25 \\ 0 & 1 \end{bmatrix}$$

$$[S] = \begin{bmatrix} 0.726e^{j125.38^\circ} & 1.54e^{j68.2^\circ} \\ 1.54e^{j68.2^\circ} & 0.726e^{j125.38^\circ} \end{bmatrix}$$

$$\Gamma = \frac{10 + j25}{50 + j25} = 0.726e^{j125.38^\circ}$$

$$1 - \Gamma = 1.538e^{j33.7^\circ}$$

$$[A] = \begin{bmatrix} \cos \Theta & j50 \sin \Theta \\ j0.02 \sin \Theta & \cos \Theta \end{bmatrix}, \quad \Theta_1 = 0.8 + 2\pi$$

$$\Theta_2 = 0.25 + 2\pi$$

$$[A]_{0.8\pi} [A]_{0.25\pi} = \begin{bmatrix} 0.31 & 31 - j9.8 \\ -0.02j & .78 - .19j \end{bmatrix}$$

$$[A]_{0.8\pi} [A]_{0.25\pi} = \begin{bmatrix} 0 & j50 \\ j.02 & -0.5 + .2j \end{bmatrix}$$

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Witnessed & Understood by me,

Date

Invented by:

Date

Recorded by: