電工實驗 5

第一次實驗

預報

Date: 2024/09/24

Class: 電機四全英班

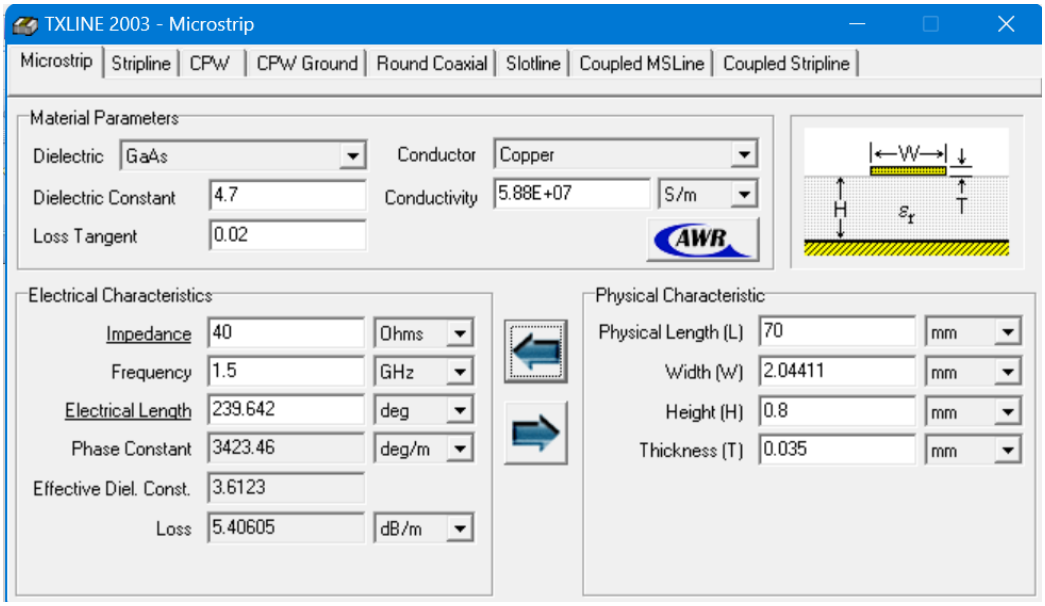
Group: Group 9

Name: B103105006 胡庭翊

B103015018 劉姵妤

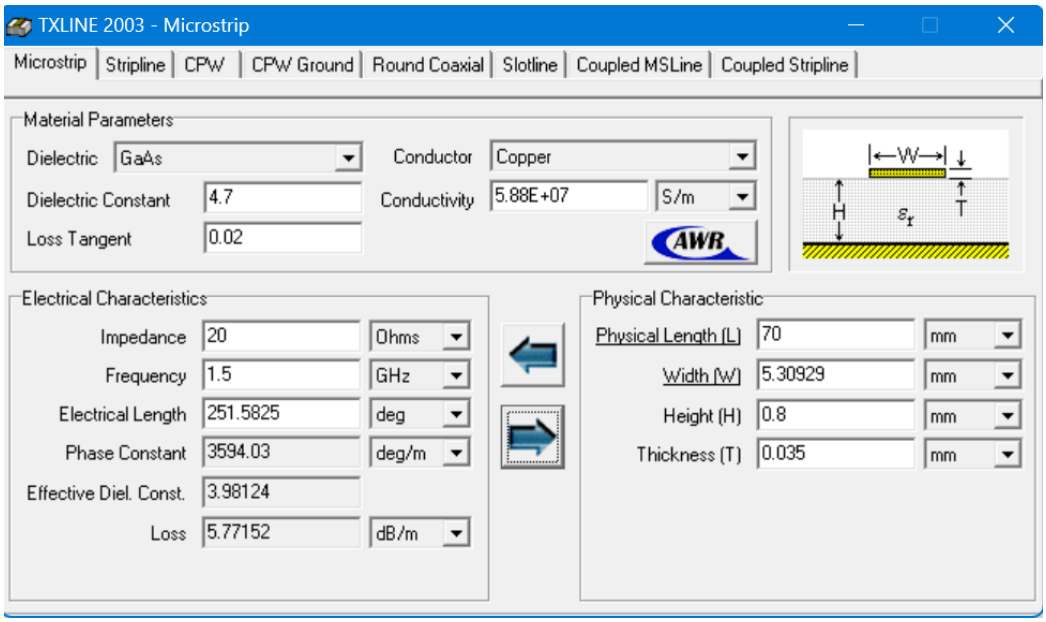
I. TXLINE 參數設定

A. 40 Ohm:



結論: W = 2.04411mm

B. 20 Ohm:



結論:W = 5.30929mm

II. Libra 的 code

A. 40 Ohm 開路

```
DIM
FREQ    GHZ
RES     OH
LNG     MM
ANG     DEG
IND     NH
CAP     PF

CKT
MSUB    ER=4.7  H=0.8   T=0.035 RHO=0   RGH=0
TAND            TAND=0.02
MLIN    1       2       W=2.04411      L=70

DEF1P   1       EXP1

FREQ
SWEEP   0       4       0.01

OUT
EXP1    DB[S11] GR1
EXP1    MAG[z1] GR2

GRID
RANGE   0       4       0.01
GR1     -2      0.5     0.01
GR2     -100    1500    100
```

B. 40Ohm 短路

```
DIM
FREQ    GHZ
RES     OH
LNG     MM
ANG     DEG
IND     NH
CAP     PF

CKT
MSUB    ER=4.7  H=0.8   T=0.035 RHO=0   RGH=0
TAND            TAND=0.02
MLIN    1       2       W=2.04411      L=70
RES     2       0       R=0
DEF1P   1       EXP1

FREQ
SWEEP   0       4       0.01

OUT
EXP1    DB[S11] GR1
EXP1    MAG[z1] GR2

GRID
RANGE   0       4       0.01
GR1     -2      0.5     0.01
GR2     -100    1500    100
```

C. 20Ohm 開路

```
DIM
FREQ    GHZ
RES     OH
LNG     MM
ANG     DEG
IND     NH
CAP     PF

CKT
MSUB    ER=4.7  H=0.8   T=0.035 RHO=0   RGH=0
TAND            TAND=0.02
MLIN    1       2       W=2.04411      L=70
RES     2       0       R=0
DEF1P   1       EXP1

FREQ
SWEEP   0       4       0.01

OUT
EXP1    DB[S11] GR1
EXP1    MAG[z1] GR2

GRID
RANGE   0       4       0.01
GR1     -2      0.5     0.01
GR2     -100    1500    100
```

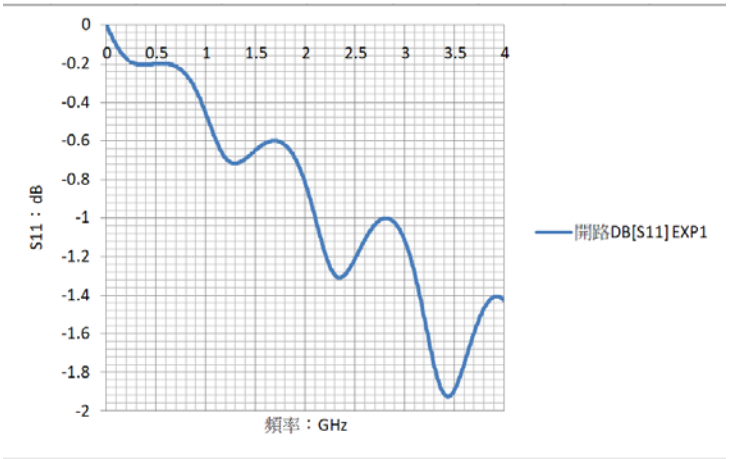
D. 20Ohm 短路

```
DIM
FREQ    GHZ
RES     OH
LNG     MM
ANG     DEG
IND     NH
CAP     PF

CKT
MSUB    ER=4.7  H=0.8   T=0.035 RHO=0   RGH=0
TAND            TAND=0.02
MLIN    1       2       W=5.30929      L=70
RES     2       0       R=0
DEF1P   1       EXP1

FREQ
SWEEP   0       4       0.01

OUT
EXP1    DB[S11] GR1
EXP1    MAG[z1] GR2

GRID
RANGE   0       4       0.01
GR1     -2      0.5     0.01
GR2     -100    1500    100
```

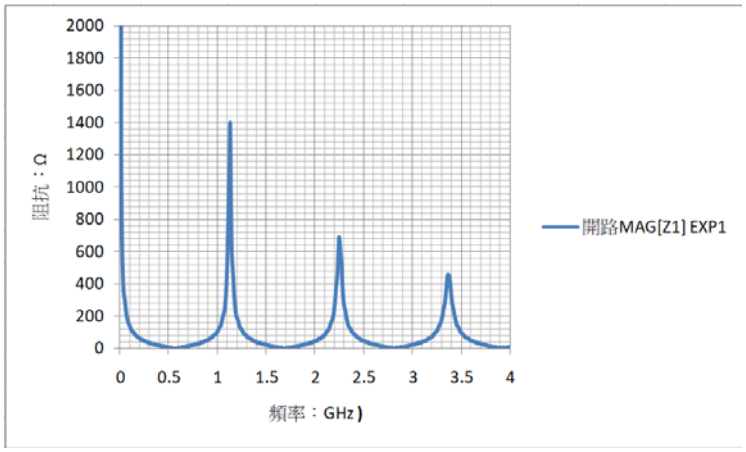
III.模擬結果

A. 40Ohm 開路

1. S11

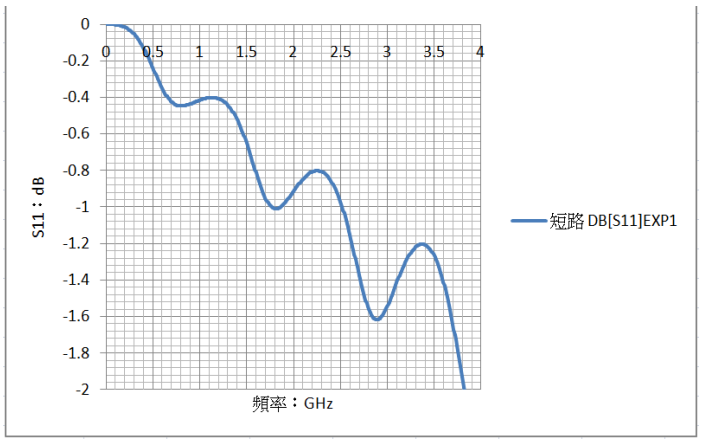


2. Z1

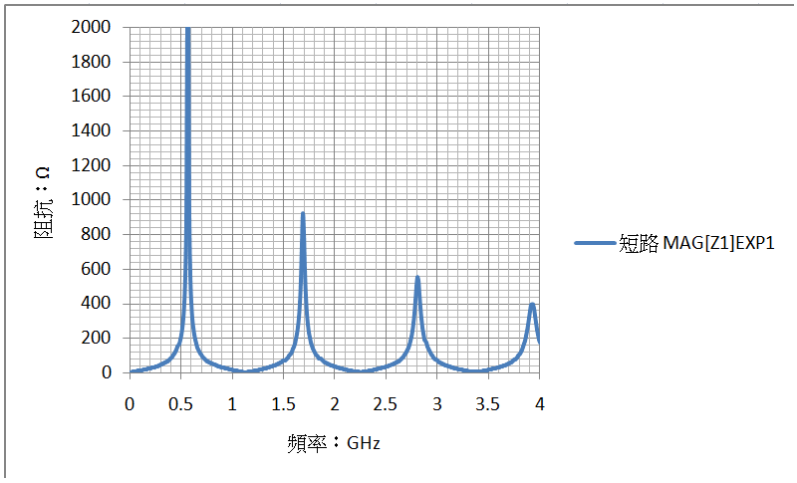


B. 40Ohm 短路

1. S11

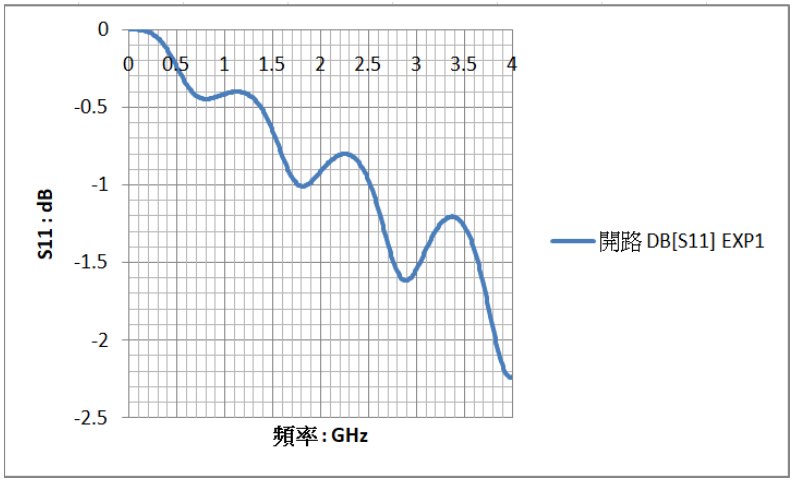


2. Z1

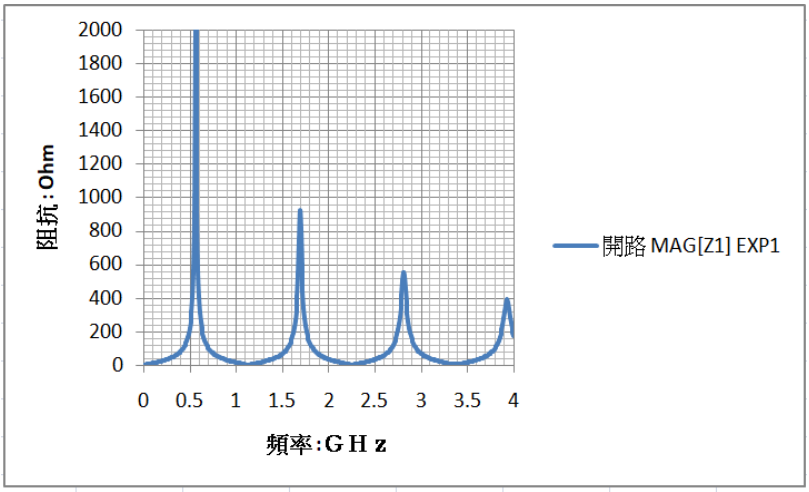


C. 20Ohm 開路

1. S11

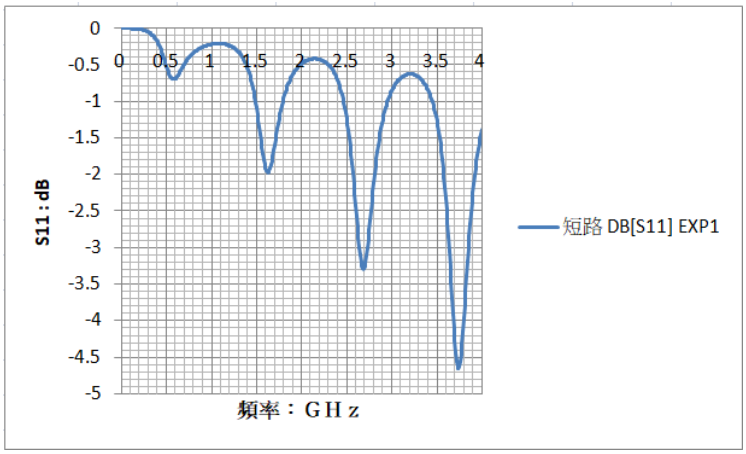


2. Z1



D. 20Ohm 短路

1. S11



2. Z1