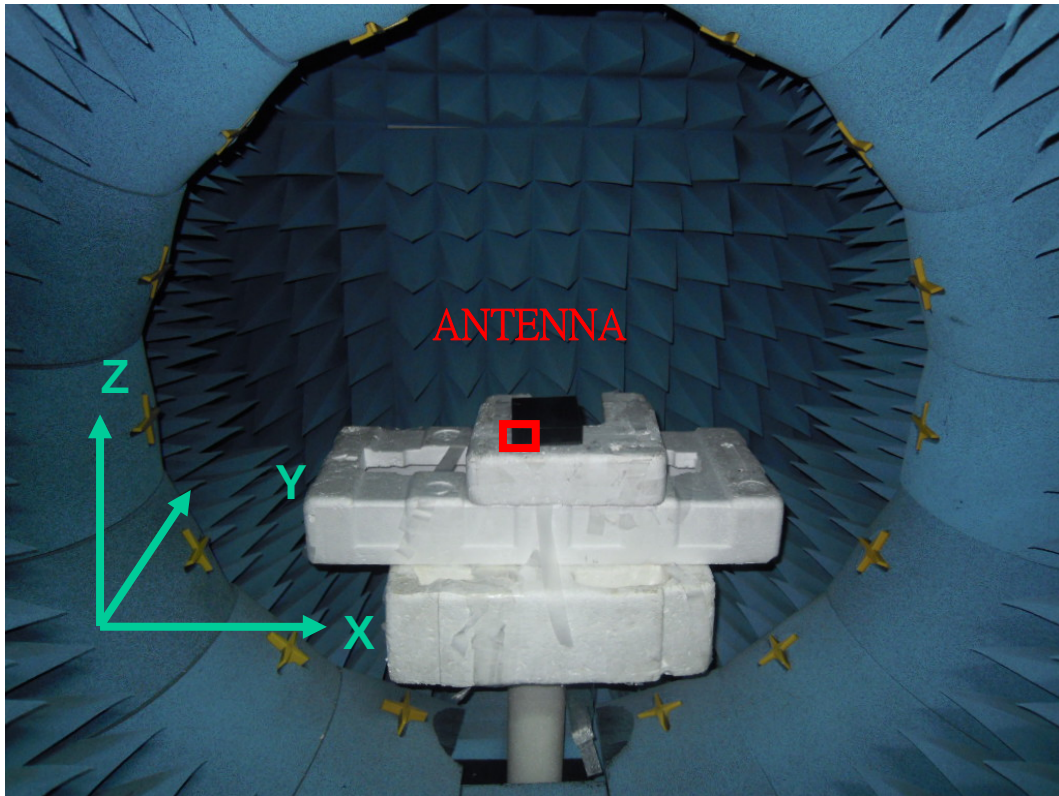
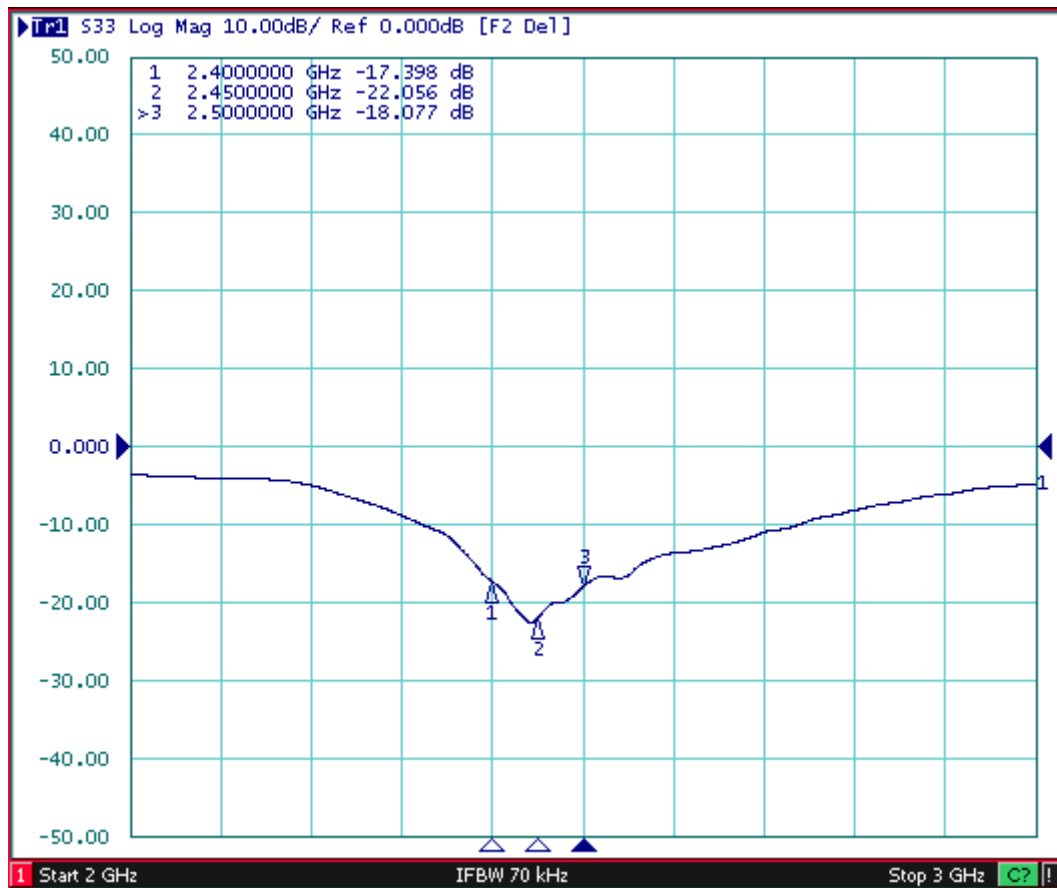


**PIFA Antenna**  
**Max Antenna Gain: 2.74dBi**

**1. Experimental Setup**



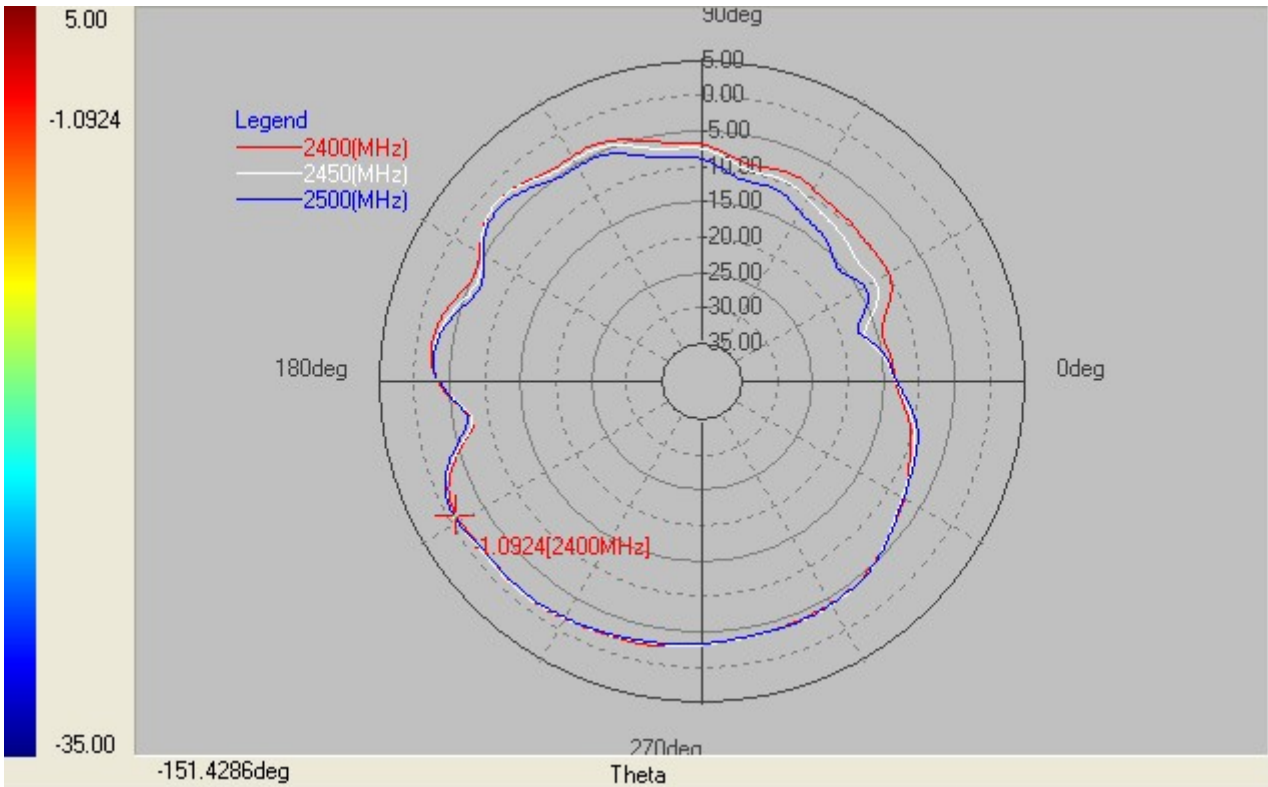
## 2. Return Loss



### 3. Radiation Patterns

▲ Phi=0.00deg

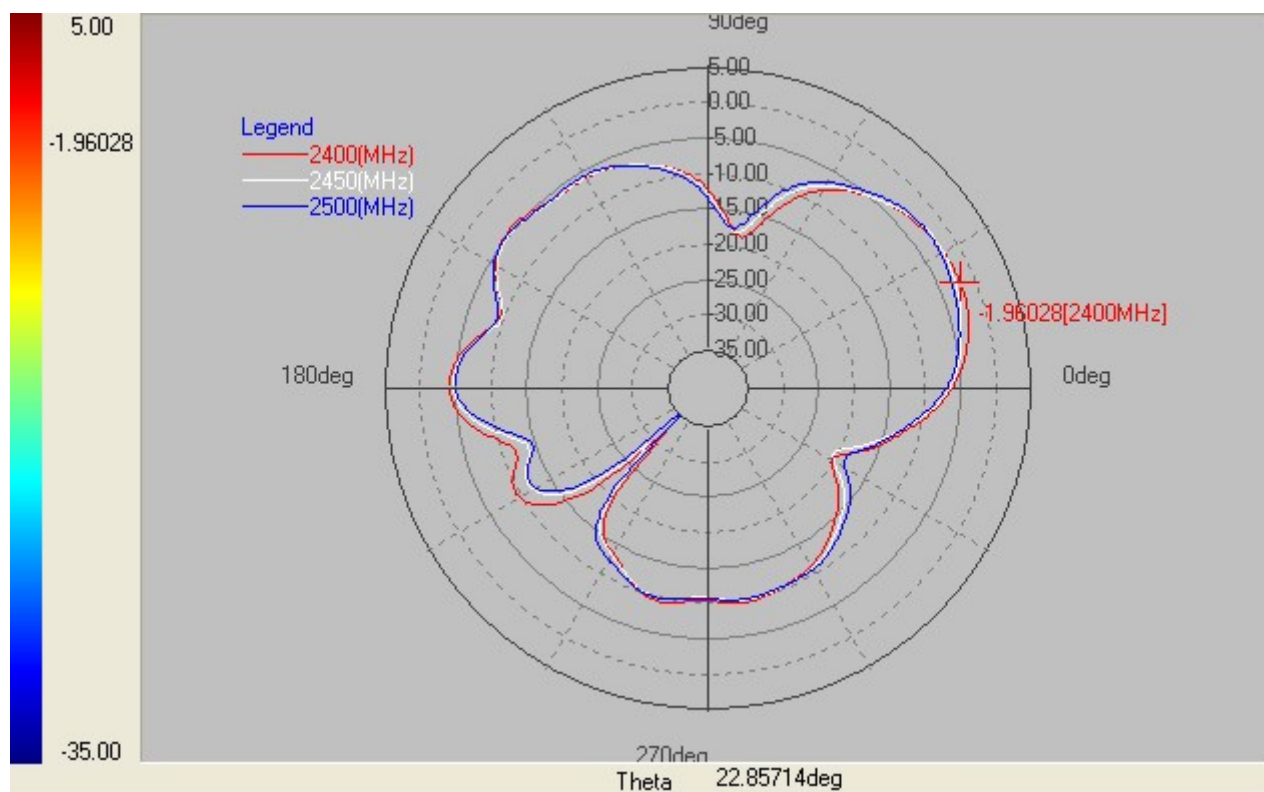
Gain Phi. dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | -1.09     | -4.75   |
| 2450(MHz) | -0.75     | -4.93   |
| 2500(MHz) | -0.80     | -5.22   |

▲ Phi=0.00deg

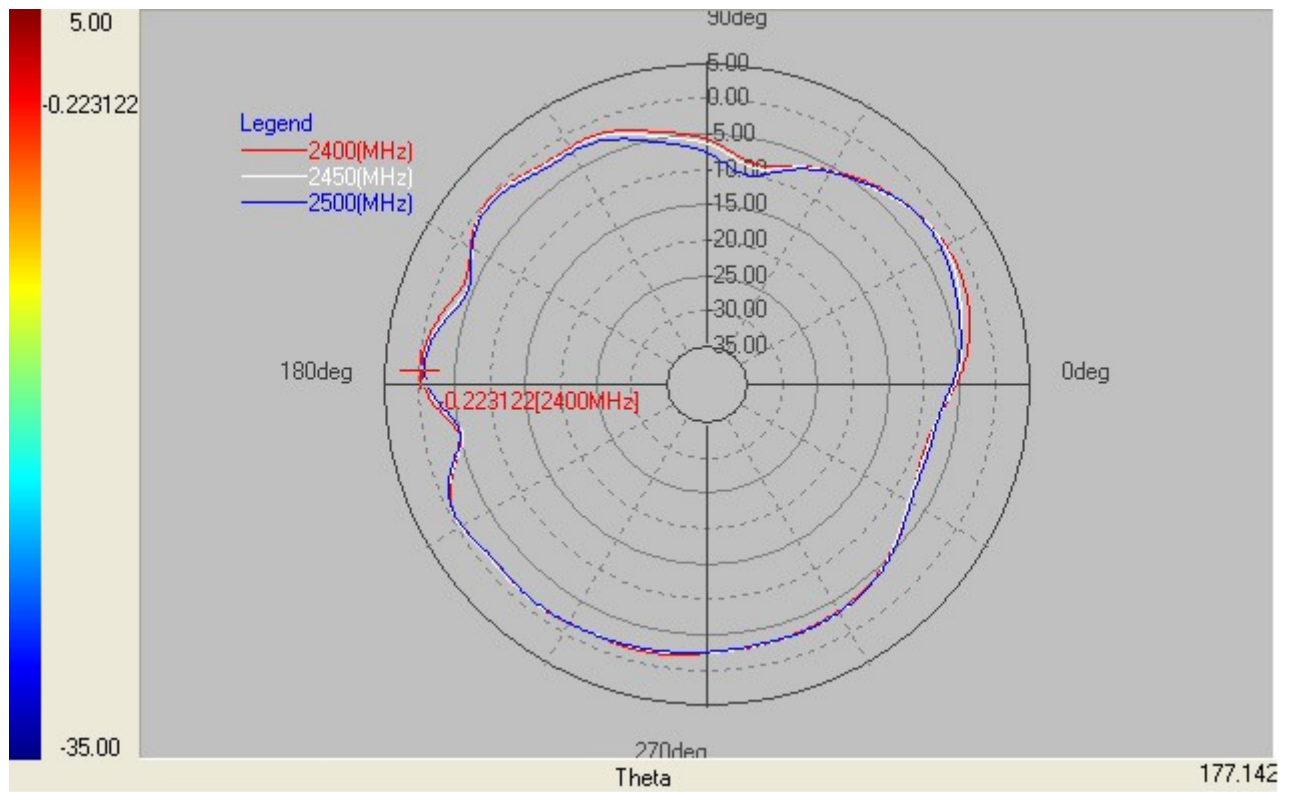
### Gain Theta. dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | -1.96     | -7.62   |
| 2450(MHz) | -2.18     | -7.92   |
| 2500(MHz) | -2.48     | -7.92   |

▲ Phi=0.00deg

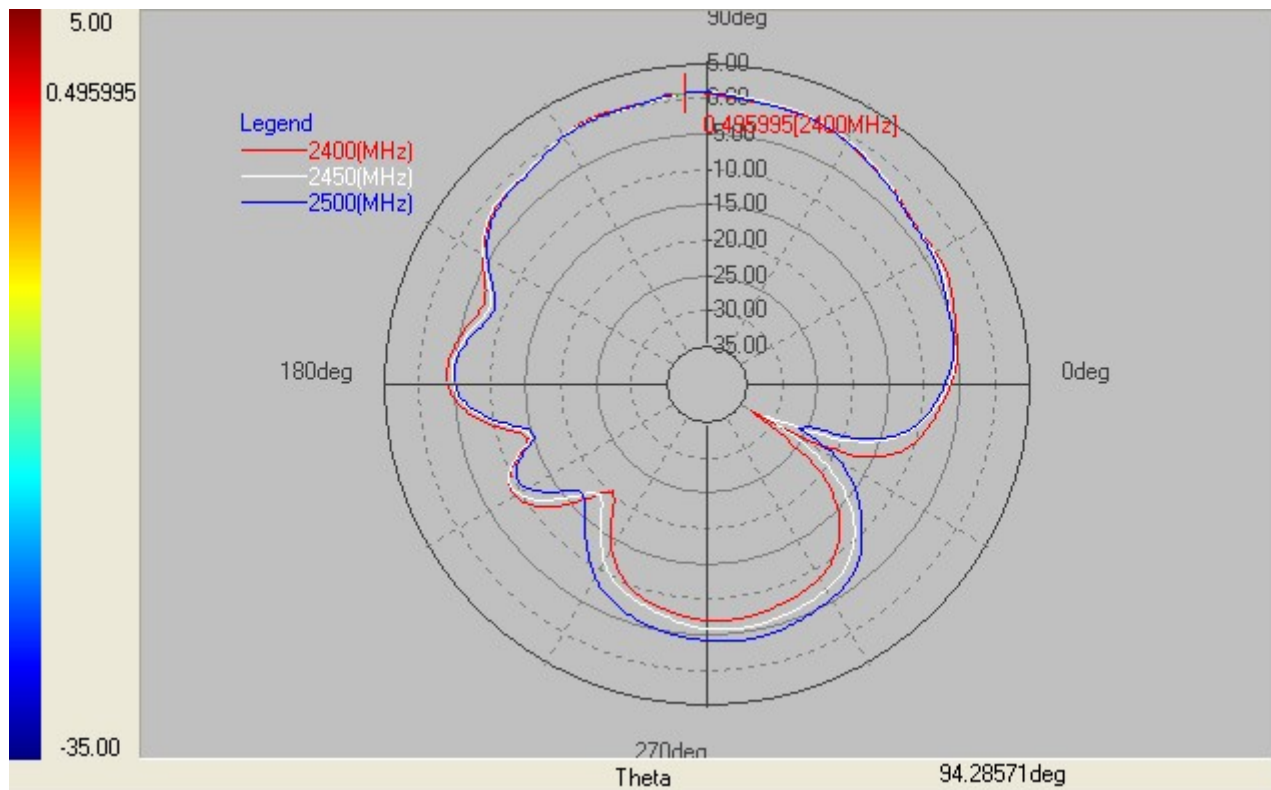
Gain . dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | -0.22     | -2.94   |
| 2450(MHz) | -0.42     | -3.16   |
| 2500(MHz) | -0.49     | -3.36   |

▲ Phi=90.00deg

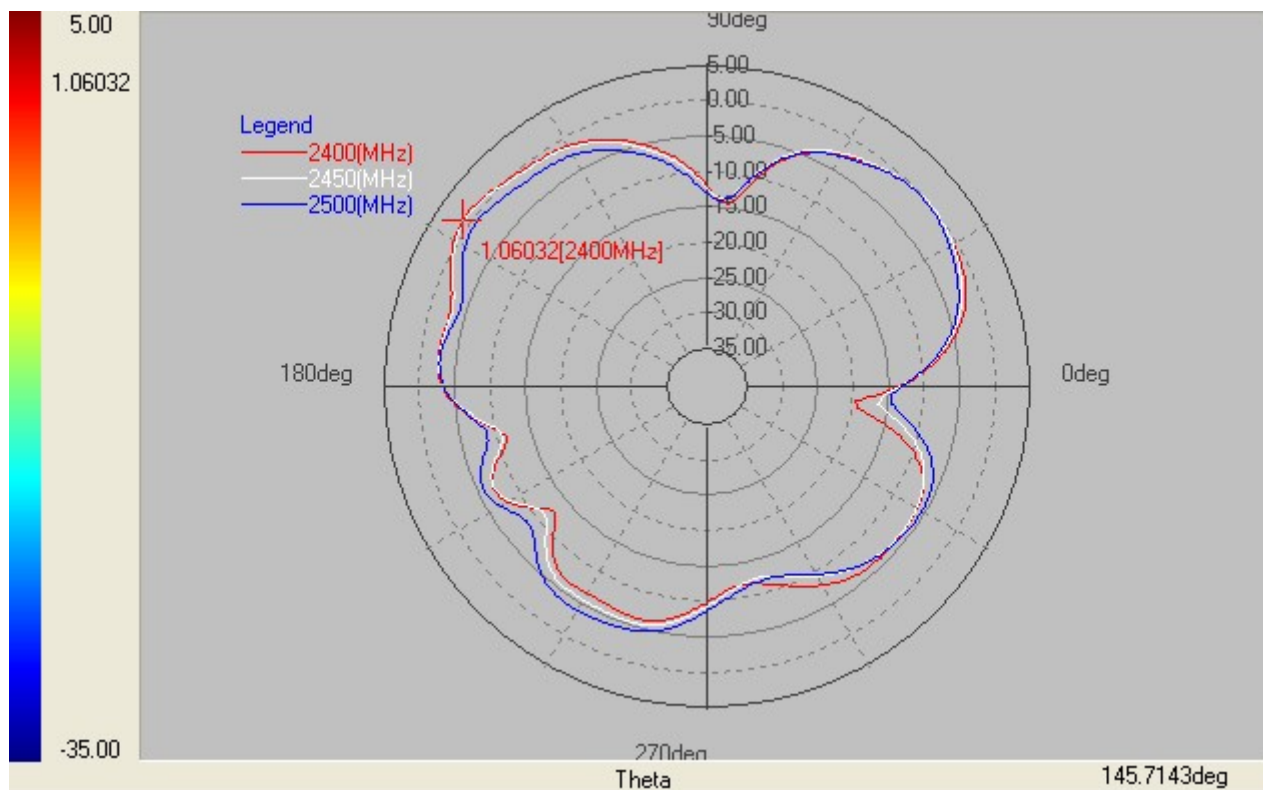
Gain Phi. dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | 0.50      | -4.19   |
| 2450(MHz) | 0.72      | -4.10   |
| 2500(MHz) | 0.68      | -4.06   |

▲Phi=90.00deg

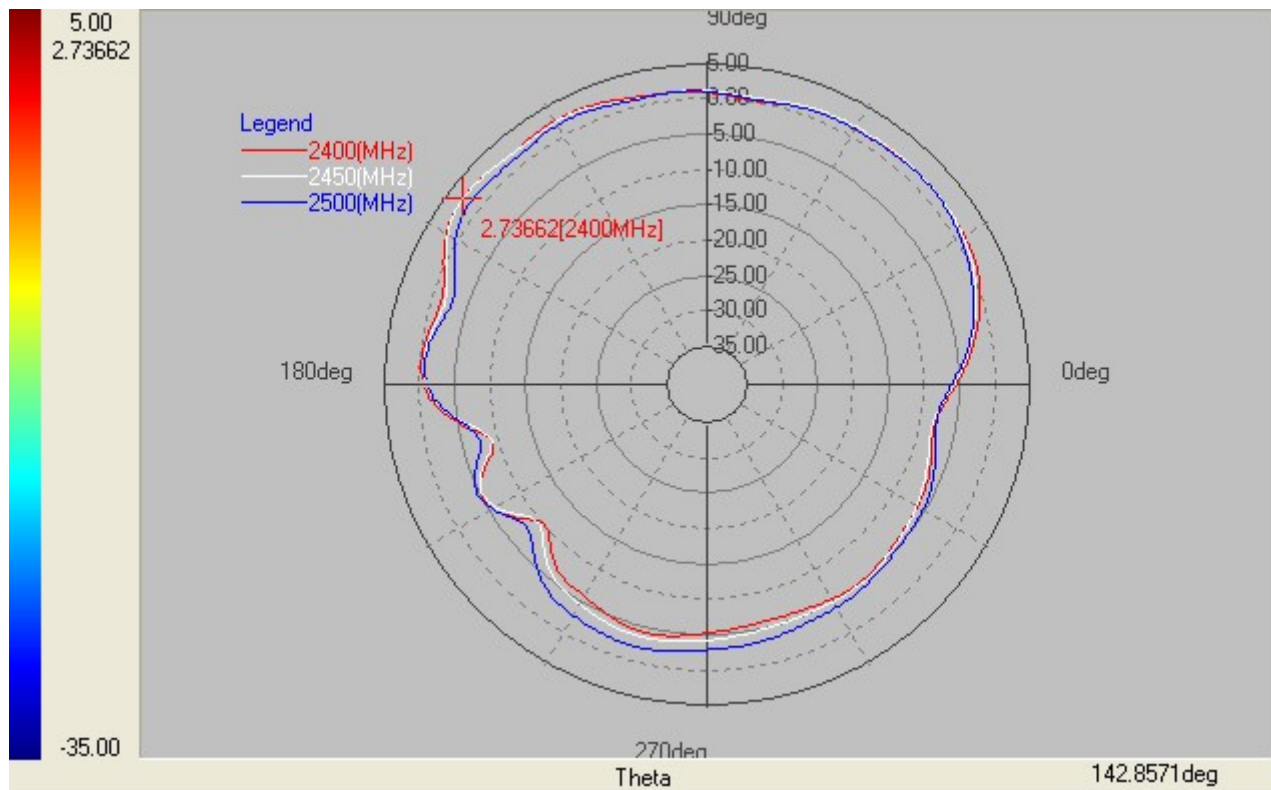
### Gain Theta. dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | 1.06      | -4.33   |
| 2450(MHz) | 0.84      | -4.43   |
| 2500(MHz) | -0.11     | -4.74   |

▲ Phi=90.00deg

Gain . dB

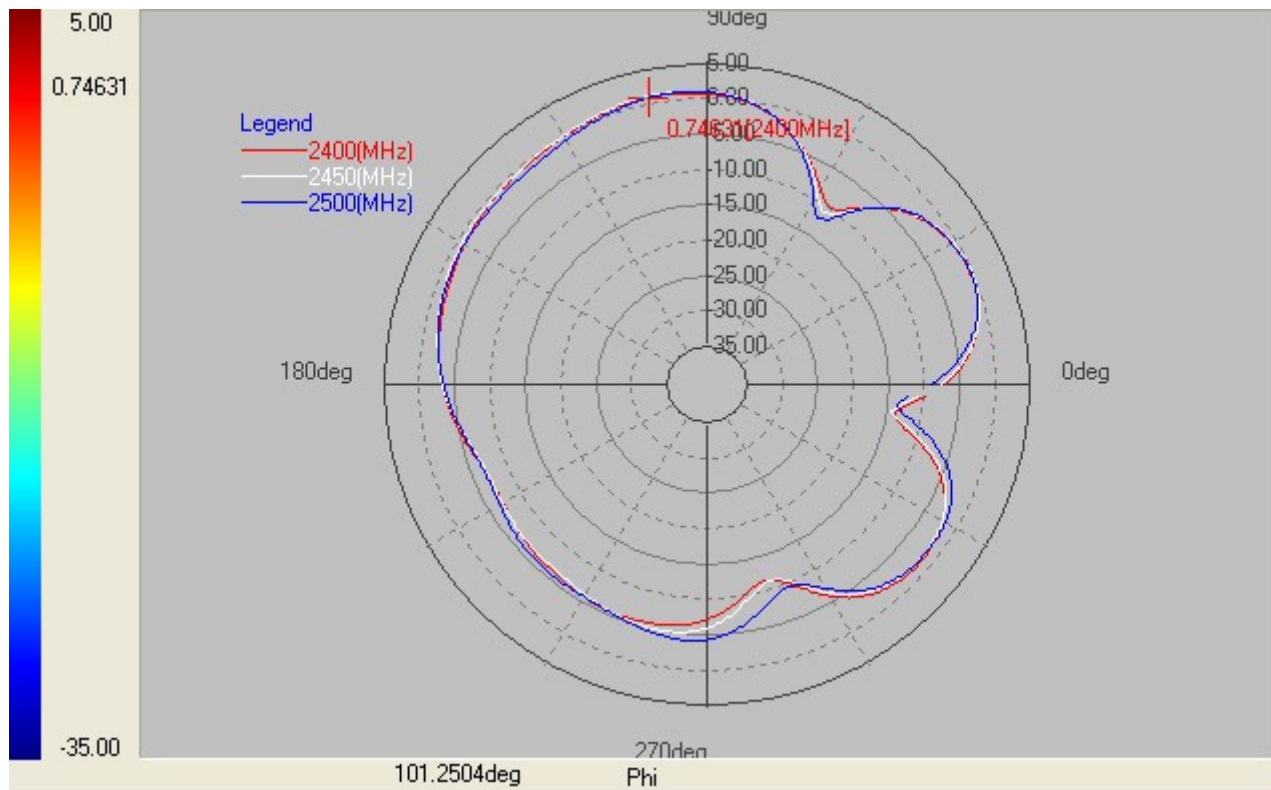


| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | 2.74      | -1.25   |
| 2450(MHz) | 2.69      | -1.25   |
| 2500(MHz) | 1.65      | -1.37   |



▲ Theta=90.00deg

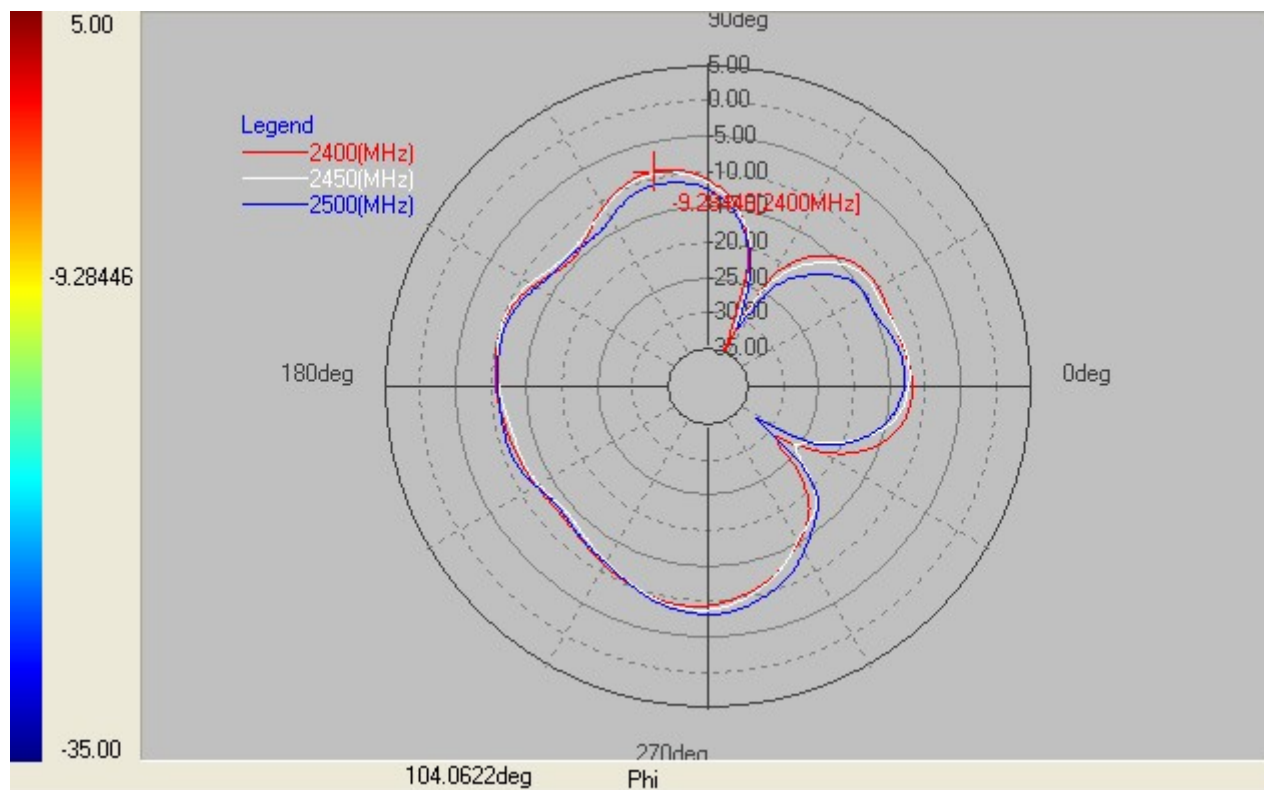
Gain Phi. dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | 0.75      | -3.00   |
| 2450(MHz) | 0.96      | -2.88   |
| 2500(MHz) | 0.84      | -2.97   |

▲ Theta=90.00deg

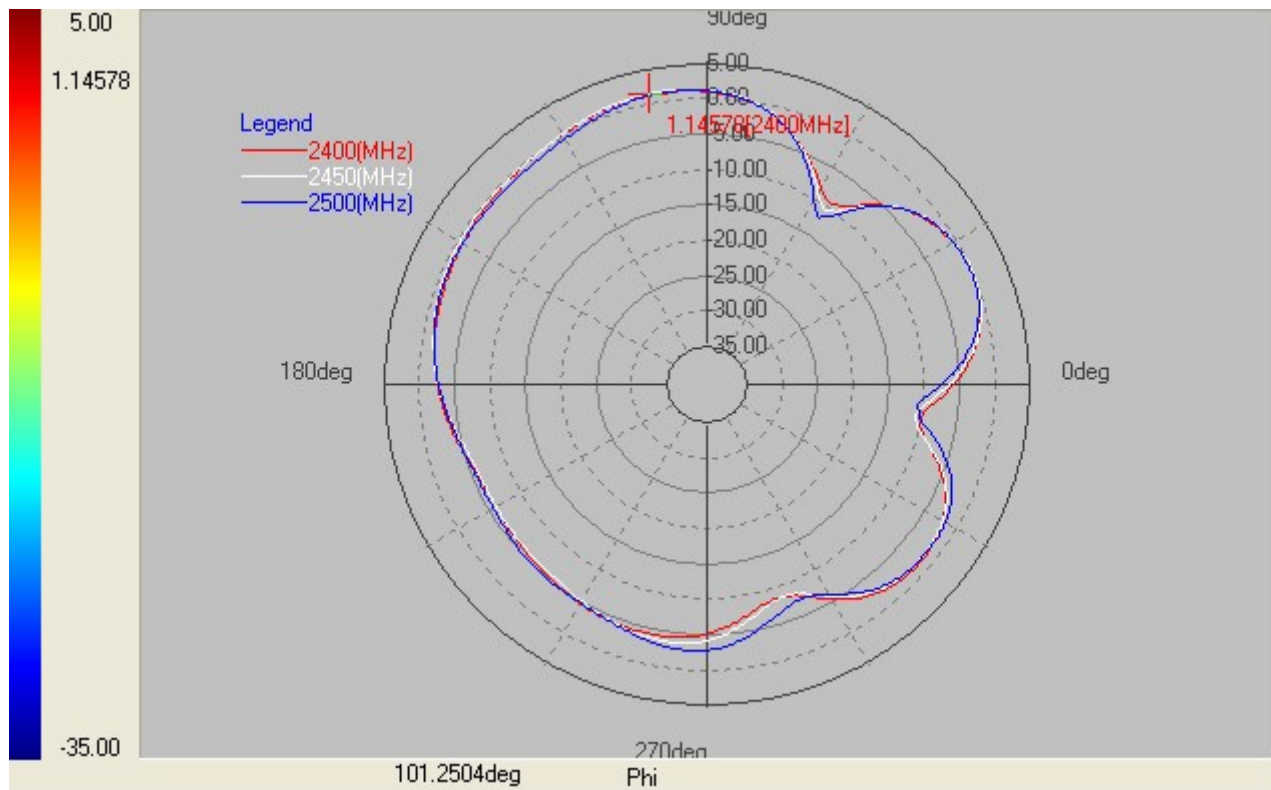
### Gain Theta. dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | -9.28     | -12.41  |
| 2450(MHz) | -8.96     | -12.60  |
| 2500(MHz) | -8.40     | -12.73  |

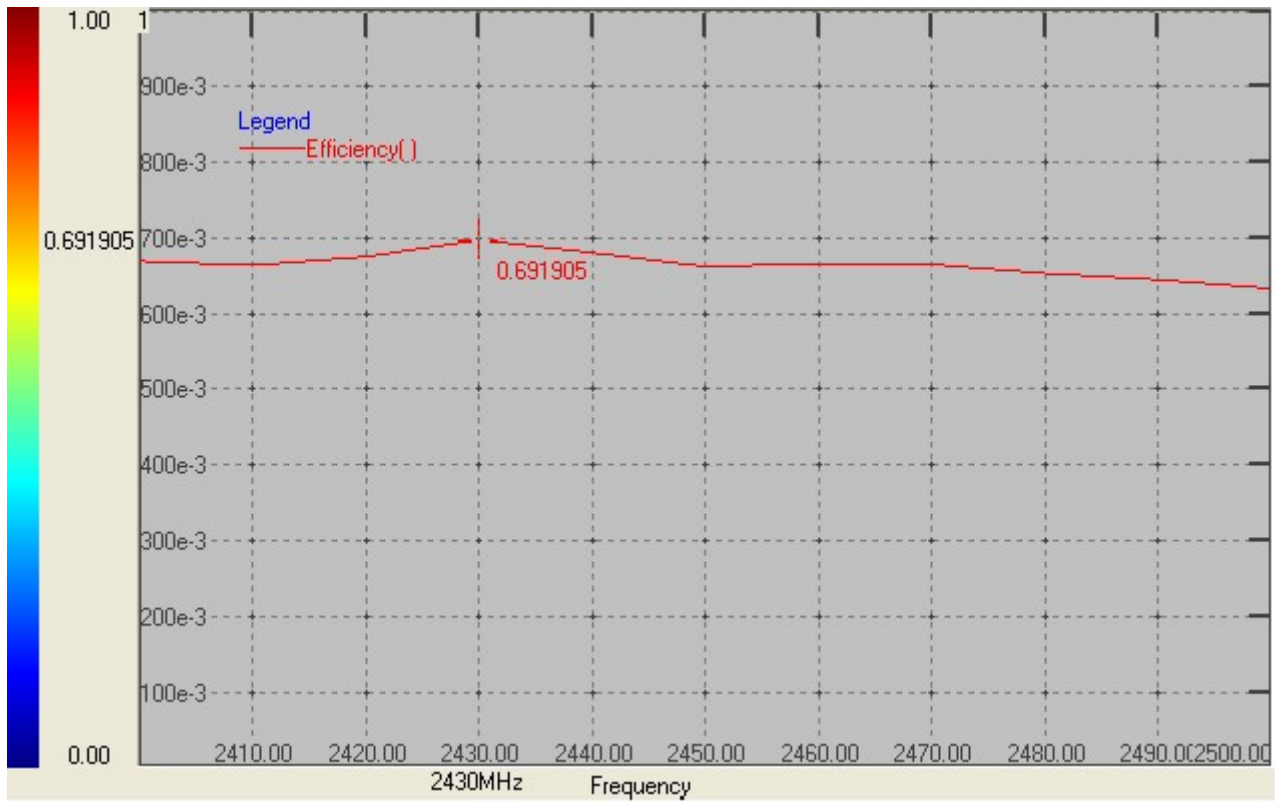
▲ Theta=90.00deg

Gain . dB



| Layer     | Max value | Average |
|-----------|-----------|---------|
| 2400(MHz) | 1.15      | -2.53   |
| 2450(MHz) | 1.29      | -2.43   |
| 2500(MHz) | 1.07      | -2.54   |

## 4. Efficiency



**Maximum Efficiency At 2.4-2.5 GHz : 69.19 %**