

APPROVAL SHEET

(RoHS)

CUSTOMER : 啟基
CUSTOMER'S :
PART NO. :
DESCRIPTION : RF ANTENNA ASSEMBLY
PART NO. : BTEAWT213025GC4A10
MT PID :
DATE :
AUTHORIZED BY : *Cheng Lin*

	FULLY APPROVED	PARTIALLY APPROVED	REJECTED
SIGN			
SUGGESTION			

美磊科技股份有限公司

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MAG.LAYERS

Revisions

[illegible]

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Antenna Specification

ELECTRICAL PROPERTIES

- 1.1 Frequency Range 2.4~2.5GHz
- 1.2 Impedance 50 Ohm Nominal
- 1.3 Return Loss 2.4~2.5GHz / -10dB (Max)
- 1.4 VSWR 2.4~2.5GHz / 2(Max)
- 1.5 Radiation Omni-directional
- 1.6 Peak Gain 2.4~2.5GHz / 3.46dBi
- 1.7 Efficiency..... 2.4~2.5GHz / 63.41%
- 1.8 Polarization Linear
- 1.9 Admitted Power 1W

PHYSICAL PROPERTIES

- 2.1 Antenna Cover..... PC110U (Black)
- 2.2 Antenna Upper Fixed Base..... ABS (Black)
- 2.3 Antenna Bottom Fixed Base..... PC110U (Black)
- 2.4 Coaxial Cable Ø1.37 (Green)
- 2.5 Connector RP SMA PLUG
- 2.6 Operating Temp..... -20℃ ~ +65℃
- 2.7 Storage Temp..... -30℃ ~ +75℃



Appearance Specification

The product can be broken down into distinct classes of surfaces:

Surface

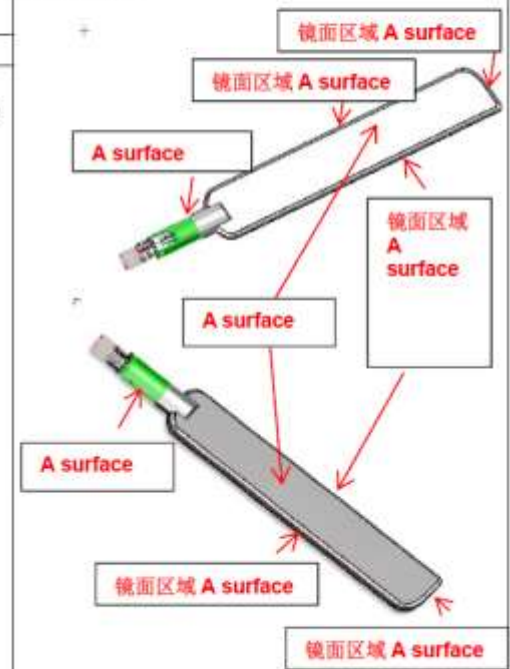
Surface of Class	Surface Areas
A	The all direction of the cover where people can see directly.
B	The all direction of the connector where people can see directly.

A surface

Inspect Position : A surface

Critical Item	Specification	Remark
Extra Point with Same Color	Accept if $D < 0.4\text{mm}$ No closer than 25mm Allowable range $0.4\text{mm} < D < 0.5\text{mm}$ Allow 4 per 100cm^2 No closer than 25mm Reject $> 0.5\text{mm}$	a) Limit sample provided by customer will be the standard. b) L: Length, W: width, DS: Distance, D: Diameter
Extra Point with Different Color	Accept if $D < 0.4\text{mm}$ No closer than 25mm Allowable range $0.4\text{mm} < D < 0.5\text{mm}$ Allow 4 per 100cm^2 No closer than 25mm Reject $> 0.5\text{mm}$	
No-sensitive Scratch	Accept if $W < 0.05\text{mm}$ Cumulative length = 12mm Width is $> 0.05\text{mm}$ to $\leq 0.5\text{mm}$ Length $\leq 1.27\text{mm}$ Allow 4 per 100cm^2 No closer than 25mm Reject $> 0.5\text{mm} * 1.27\text{mm}$	
Bump/Dent Point	Ignore defects: $D < 0.4\text{mm}$, Accepted 2 defect: $0.4\text{mm} < D < 0.6\text{mm}$, $DS \geq 30\text{mm}$	
Sensitive Scratch	Not accepted	
Shine/Painting Disproportionate	Not accepted	
Fingerprint/Dust	Not accepted	
Peer off/ Surface Roughening	Not accepted	
Sink/ Flow mark	Not accepted	
Burr	Not accepted	
Short shot/ Crack/ Deformation	Not accepted	
Label/Peel/Dust	Not accepted	
Dimension Measurement	1). All the dimensions must meet specifications. 2). The dimensions unable measure judge by assembly.	

Definition :



- (1) Illumination: Inspection is carried out with the natural light of 800 – 1200Lux. or the fluorescent light.
- (2) Inspection distance 30cm.
- (3) Viewing Times: 3~5 sec
- (4) Viewing Angle: $\pm 45^\circ$



The product can be broken down into distinct classes of surfaces:

Surface

Surface of Class	Surface Areas
A	The all direction of the cover where people can see directly.
B	The all direction of the connector where people can see directly.

Color Measurement	The materials not paints: 目前不可有明显差异		
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B surface

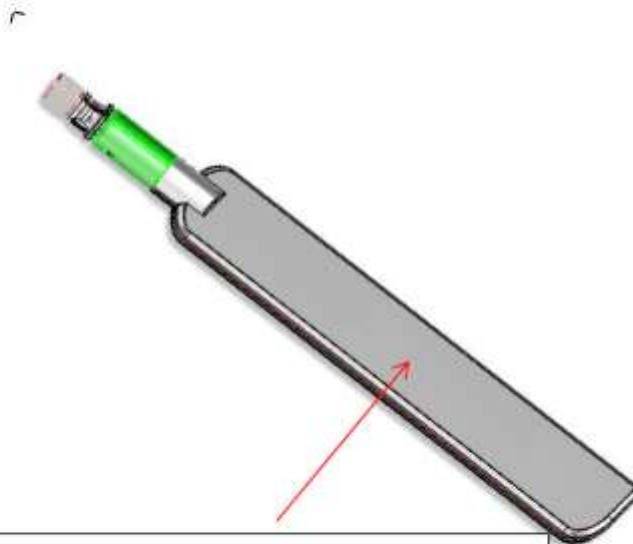
Inspect Position : B surface			Definition :
Critical Item	Specification	Remark	 B surface 镜面下方区域 B surface (1) Illumination: Inspection is carried out with the natural light of 800 – 1200Lux, or the fluorescent light. (2) Inspection distance 30cm, (3) Viewing Times: 3~5 sec (4) Viewing Angle: ±45°
Extra Point with Same Color	Accept if D<0.4mm No closer than 25mm Allowable range 0.4mm<D<0.5mm Allow 4 per 100cm ² No closer than 25mm Reject>0.5mm	a) Limit sample provided by customer will be the standard. b) L: Length, W: width, DS: Distance, D: Diameter	
Extra Point with Different Color	Accept if D<0.4mm No closer than 25mm Allowable range 0.4mm<D<0.5mm Allow 4 per 100cm ² No closer than 25mm Reject>0.5mm		
No-sensitive Scratch	Accept if W<0.05mm Cumulative length=12mm Width is >0.05mm to <= 0.5mm Length <=1.27mm Allow 4 per 100cm ² No closer than 25mm Reject>0.5mm*1.27mm		
Bump/Dent Point	Ignore defects: D<0.4 mm, Accepted 2 defect: 0.4mm <D<0.6 mm, DS≥ 30mm		
Sensitive Scratch	Not accepted		
Shine/Painting Disproportionate	Not accepted		
Fingerprint/Dust	Not accepted		
Peer off/ Surface Roughening	Not accepted		
Sink/ Flow mark	Not accepted		
Burr	Not accepted		



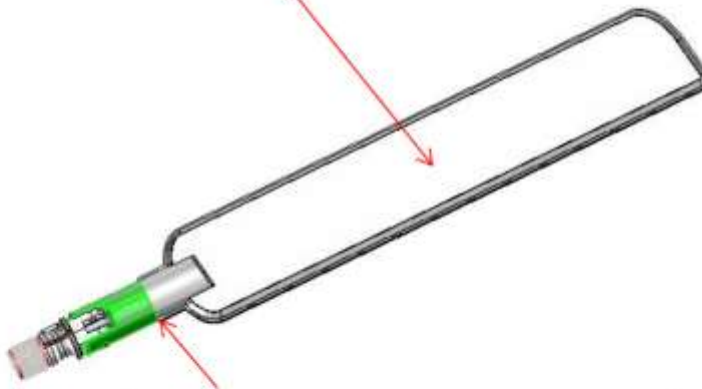
The product can be broken down into distinct classes of surfaces:

Surface

Surface of Class	Surface Areas
A	The all direction of the cover where people can see directly.
B	The all direction of the connector where people can see directly.



Case 与 case bottom 组装段差间隙 $\leq 0.3\text{mm}$ (不含美工缝 0.3mm)

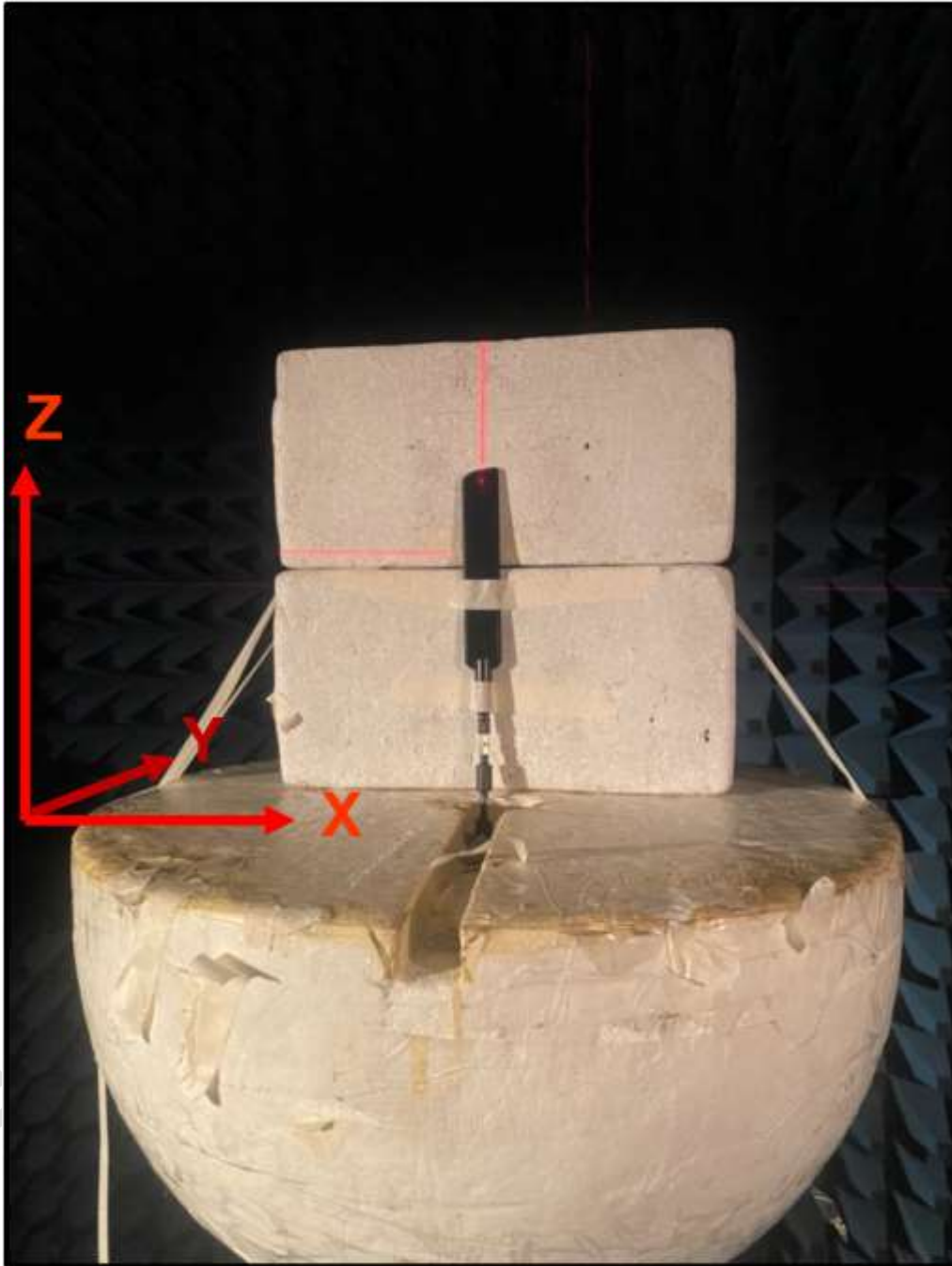


Case 和 case bottom 与
HGO_ANTENNA_SMA_MOUNTING 组装
段差间隙 $\leq 0.3\text{mm}$



Test Report

■ EXPERIMENTAL SETUP

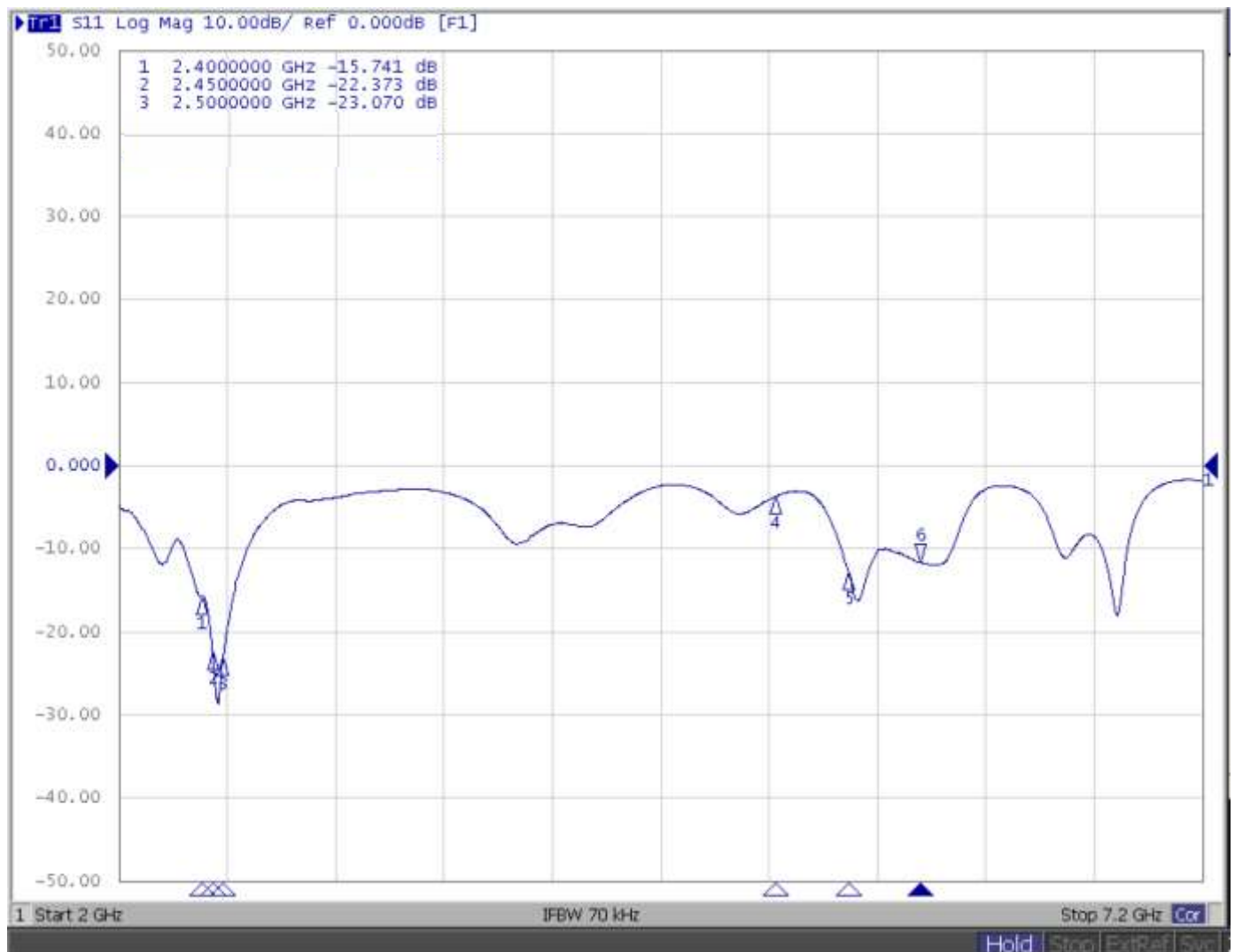


ELECTRICAL CHARACTERISTICS

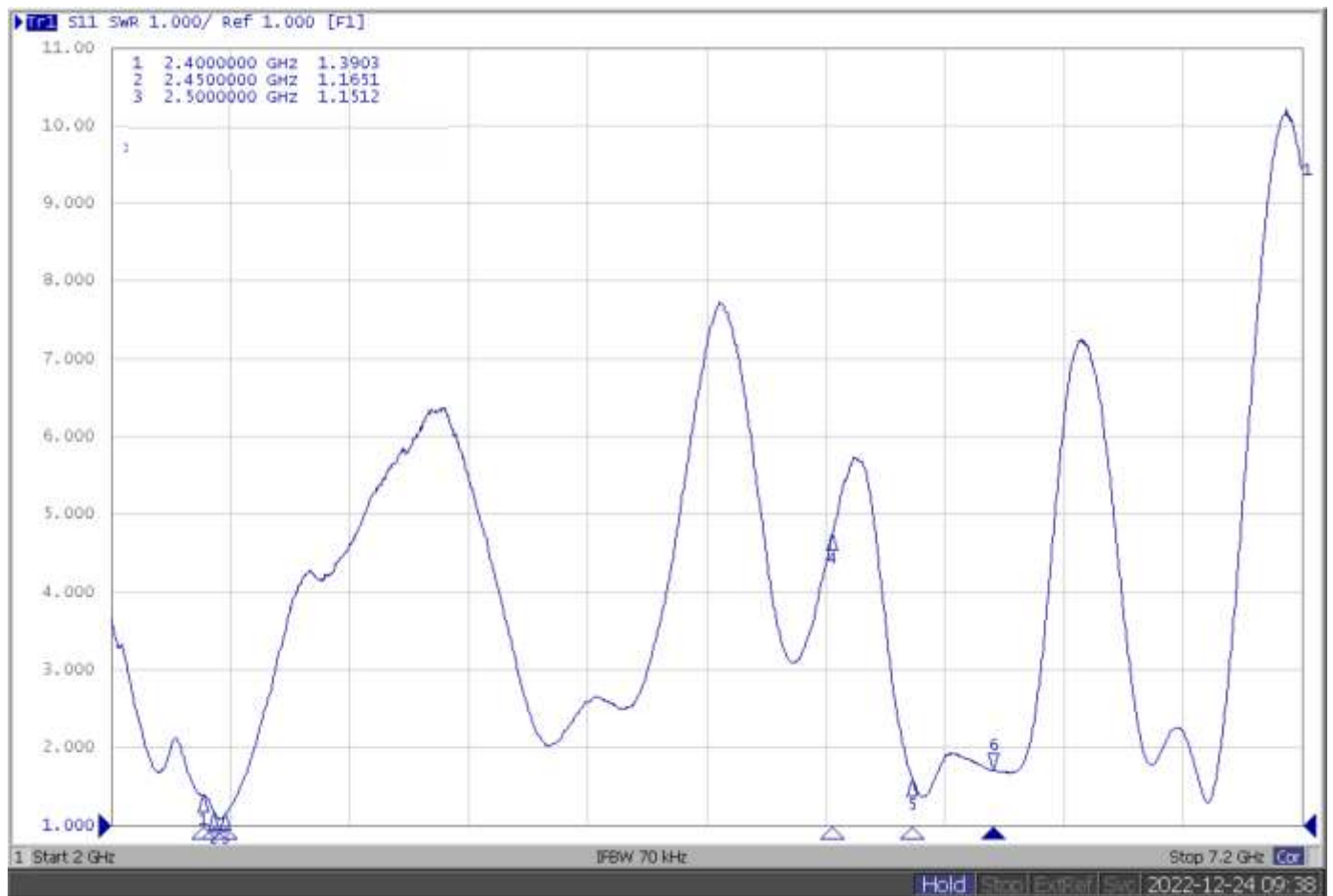
P/NO: BTEAWT213025GC4A10

Spec: 2.4~2.5GHz

Return Loss



VSWR

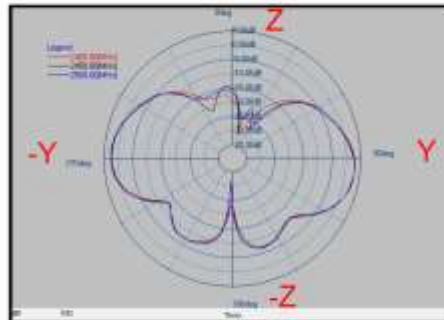


2D Gain Pattern_2450MHz

Phi = 0



Phi = 90



Theta = 90

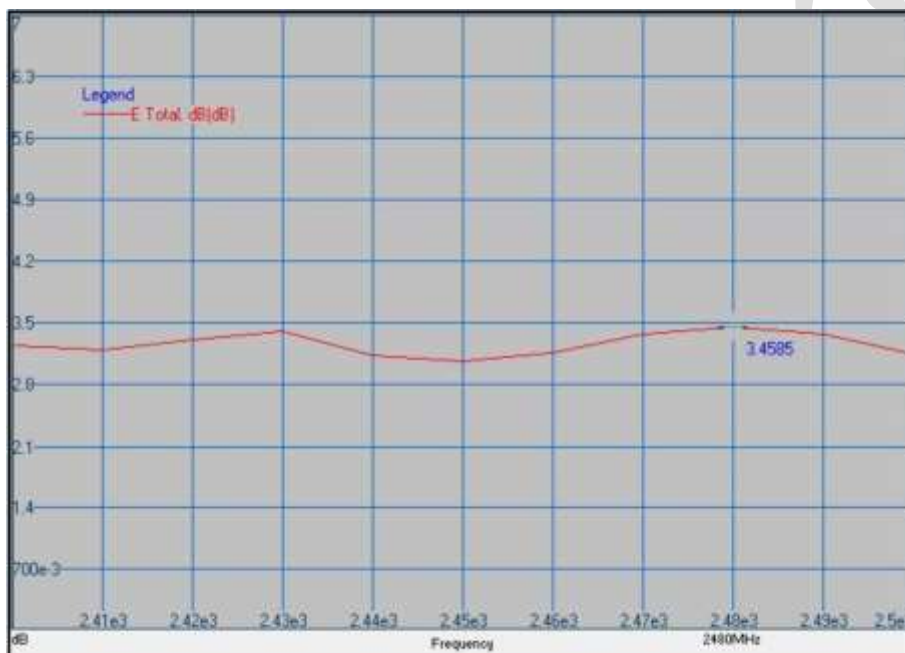


Layer	Max value	Min value	Average
2400MHz	2.46 dB	-23.17 dB	-4.02 dB
2450MHz	2.33 dB	-26.09 dB	-4.00 dB
2500MHz	2.27 dB	-25.86 dB	-4.12 dB

Layer	Max value	Min value	Average
2400MHz	3.24 dB	-32.39 dB	-3.39 dB
2450MHz	3.06 dB	-29.44 dB	-3.57 dB
2500MHz	3.15 dB	-31.84 dB	-3.37 dB

Layer	Max value	Min value	Average
2400MHz	3.13 dB	1.80 dB	2.50 dB
2450MHz	2.79 dB	1.63 dB	2.27 dB
2500MHz	2.79 dB	1.30 dB	2.29 dB

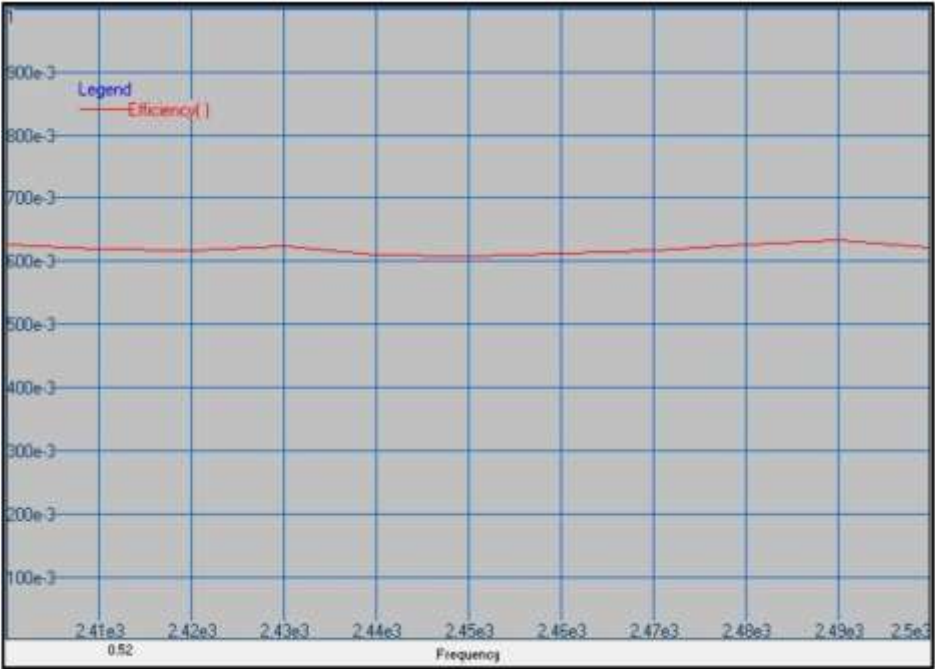
3D Peak Gain_25G Antenna(2G)



Frequency	Peak Gain(dB)
2400MHz	3.25
2410MHz	3.19
2420MHz	3.32
2430MHz	3.41
2440MHz	3.13
2450MHz	3.06
2460MHz	3.17
2470MHz	3.39
2480MHz	3.46
2490MHz	3.39
2500MHz	3.15



3D Efficiency_25G Antenna(2G)



Frequency	Efficiency
2400MHz	62.64%
2410MHz	61.98%
2420MHz	61.63%
2430MHz	62.40%
2440MHz	61.04%
2450MHz	60.83%
2460MHz	61.38%
2470MHz	61.80%
2480MHz	62.65%
2490MHz	63.41%
2500MHz	62.29%