

APPROVAL SHEET

(RoHS)

CUSTOMER : Accton Technology Corp.

CUSTOMER'S PART NO. : 120300000282S

DESCRIPTION : Metal stamping antenna assembly

PART NO. : MSA-1313-25GC4-A2-TN

PRODUCTION NAME : 美磊電子(昆山)有限公司

PRODUCTION ADDRESS : 江蘇省昆山市張浦鎮濱江南路 240 號

AUTHORIZED BY : *Alvin Chen*

	FULLY APPROVED	PARTIALLY APPROVED	REJECTED
SIGN			
SUGGESTION			

美磊科技股份有限公司

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Revisions

[illegible]

PRODUCT IDENTIFICATION

M S A - **1 3 1 3** - **# # # x x** - **A 2** -

① ② ③ ④ ⑤

- ① **Product Code**
- ② **Dimension Code**
- ③ **Series Type** (### represents center frequency and xx represents material type)
- ④ **Design Code**
- ⑤ **Inner Control Code**



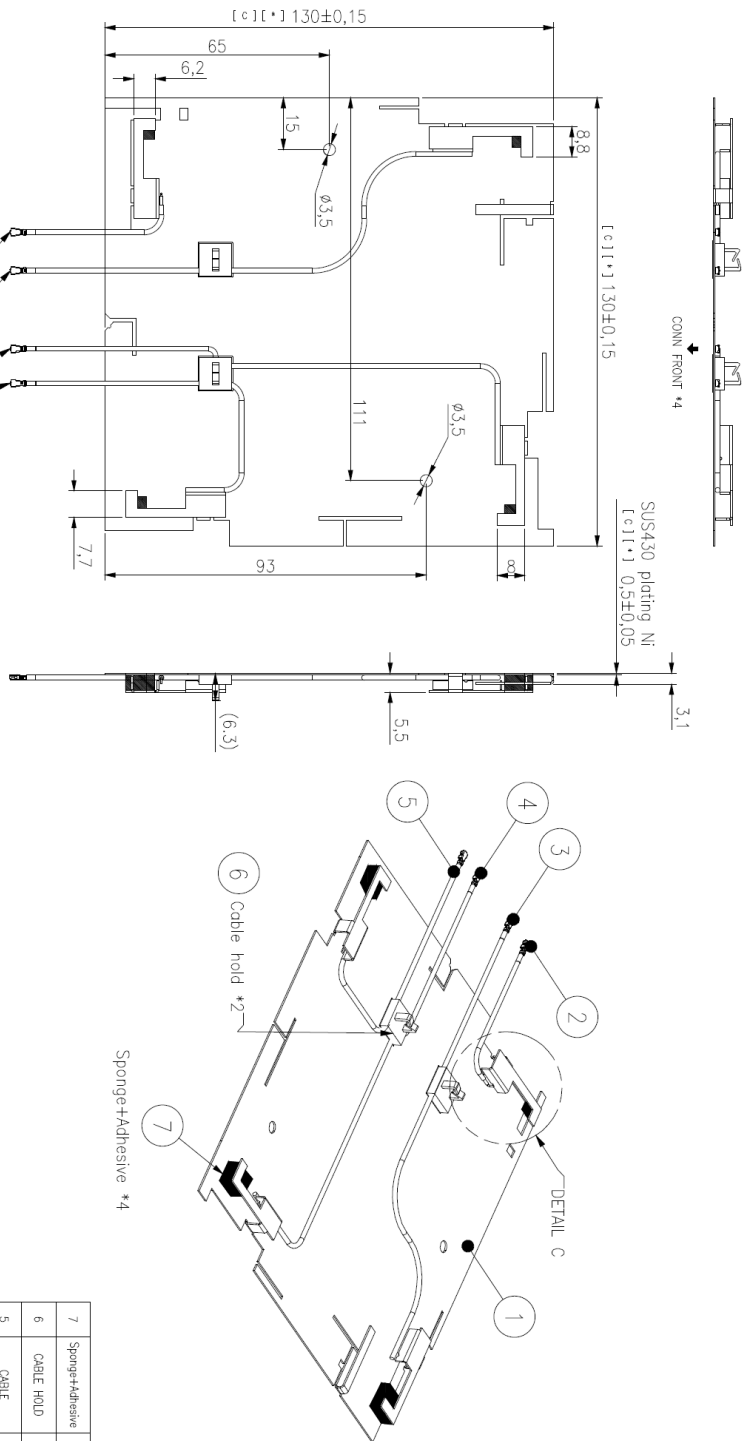
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Mechanical Specification



7	Sponge+Adhesive	EAT+MGA48	4	
6	CABLE HLD	WLL-16 COLOR: NATURAL	2	
5	CABLE	Coaxial cable Ø1.37 (BLACK) + IPEX 1 (Nomol) length=110mm	1	
4	CABLE	Coaxial cable Ø1.37 (WHITE) + IPEX 1 (Nomol) length=170mm	1	
3	CABLE	Coaxial cable Ø1.37 (GRAY) + IPEX 1 (Nomol) length=155mm	1	
2	CABLE	Coaxial cable Ø1.37 (BLUE) + IPEX 1 (Nomol) length=65mm	1	
1	METAL	SUS304 t=0.5mm PLATING NI	1	
ITEM	NAME	DESCRIPTION	QTY	REMARKS

CABLE LENG		DIMENSIONAL		F		APPROVALS		DATE		TITLE	
TOLERANCES±		TOLERANCES±		HT		DRAWN				METAL STAMPING	
10-49±2.0MM		0.5~6		±0.1						ANTENNA ASSEMBLY	
50-99±2.5MM		6~30		±0.2		DESIGNED				SIZE	
100-200±3.0MM		30~120		±0.3		CHECKED				A4	
200-499±4.0MM		120~400		±0.5		APPROVED				SHEET 1 OF 1	
500-999±5.0MM		400~1000		±0.8						MAGLAYERS DRAWING NO.	
UNLESS OTHERWISE SPECIFIED		ANGLE		±1°		THIRD ANGLE		SCALE 2:1		MAGLAYERS PART NO. MSA-1313-25GCA-A2-TN	

[*] INDICATES A CRITICAL DIMENSION WHOSE CPK IS NOT MANDATORY.

IS NOT MANDATORY

Antenna Specification

ELECTRICAL PROPERTIES

- 1.1 Frequency Range.....2.4~2.4835GHz / 5.15~5.835GHz
- 1.2 Impedance..... 50 Ohm Nominal
- 1.3 VSWR.....<3
- 1.4 Radiation.....Omni directional
- 1.5 3D Peak Gain.....Blue→ 5.43dBi(2.4GHz)
→7.54dBi(5GHz)

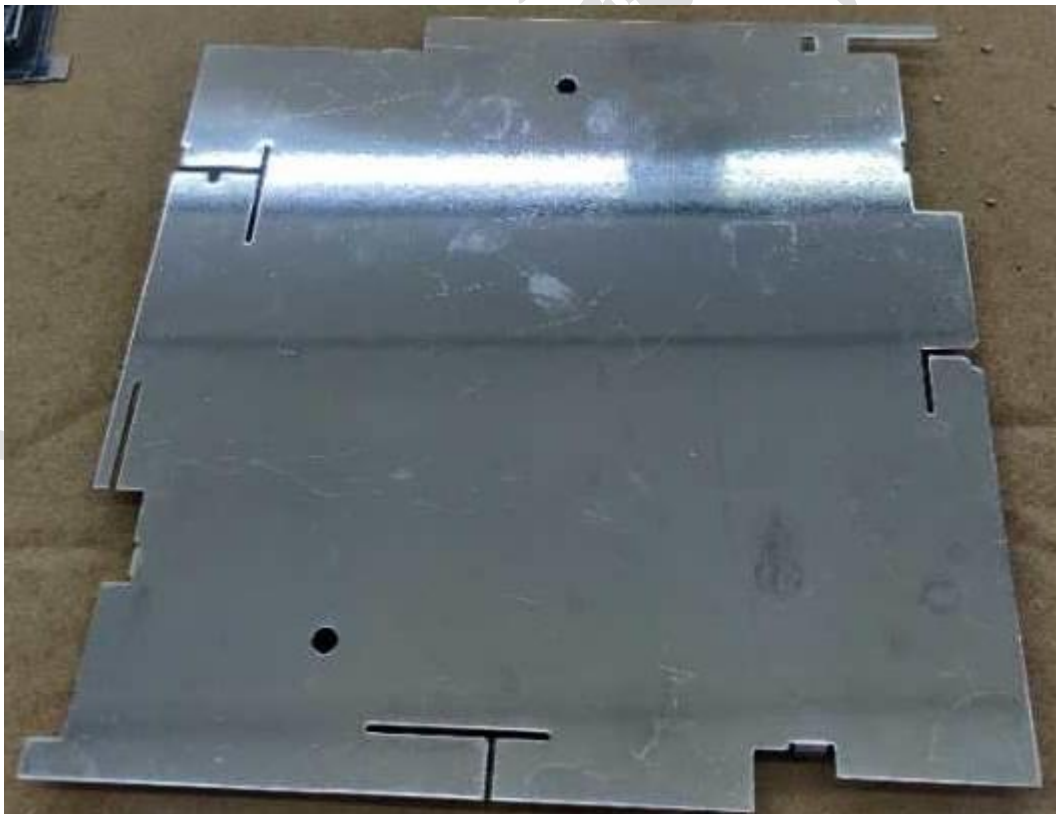
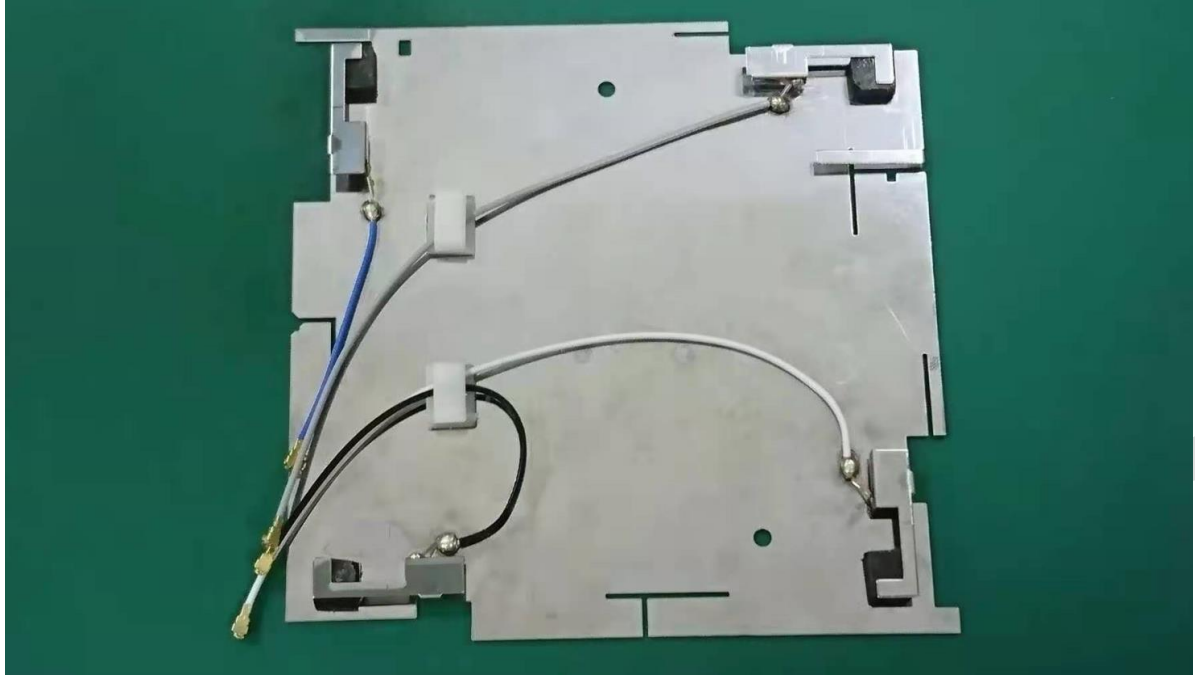
Gray→5.36dBi(2.4GHz)
→6.92dBi (5GHz)

White→5.24dBi(2.4GHz)
→6.8dBi (5GHz)

Black→5.19dBi(2.4GHz)/BLE
→6.76dBi (5GHz)
- 1.6 Polarization..... Linear Vertical
- 1.7 Admitted Power..... 1W
- 1.8 Connector..... IPEX1 Compatible
- 1.9 Operating Temp..... -20°C ~ +65°C
- 2.0 Storage Temp..... -30°C ~ +75°C
- 2.1 Storage Life..... 1Year

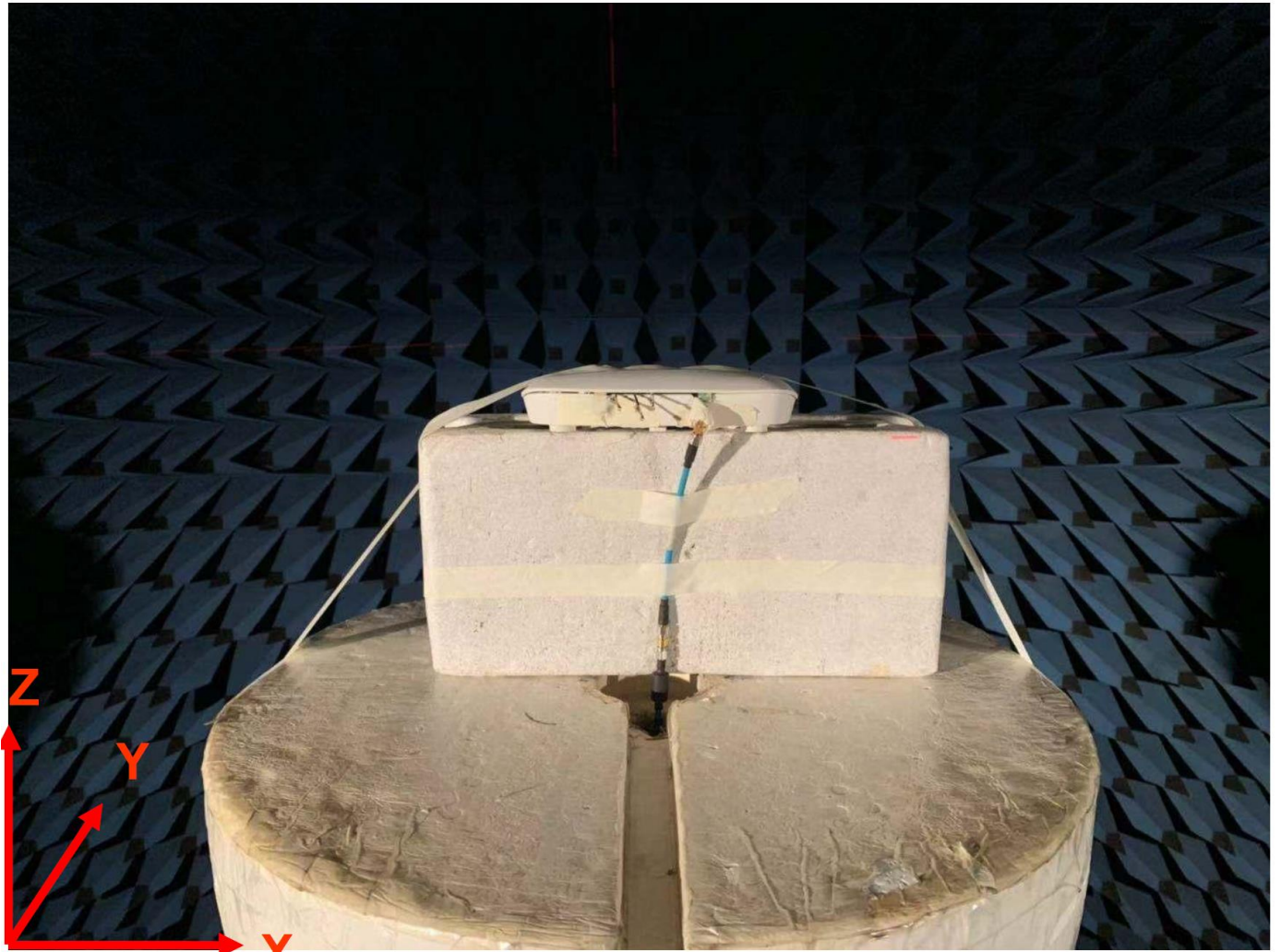


Sample photo



Test Report

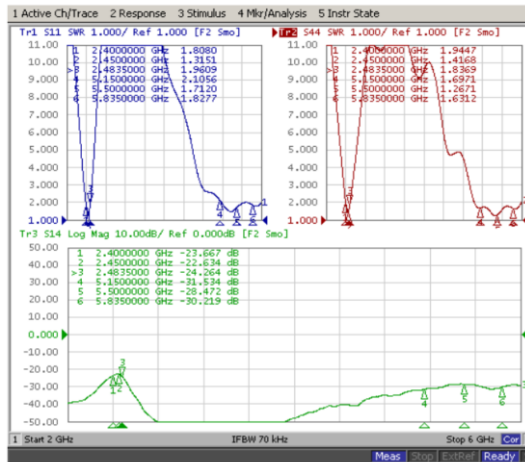
EXPERIMENTAL SETUP



VSWR & Isolation

S11: Black

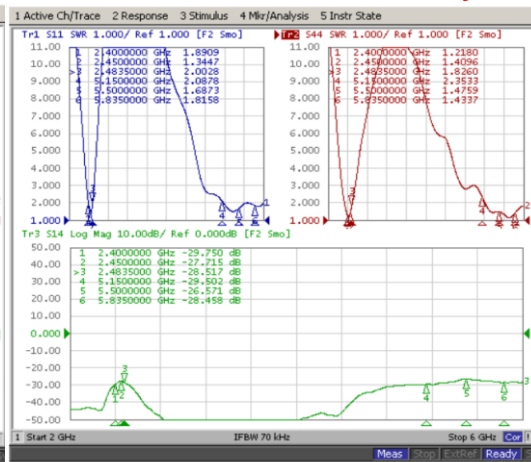
S22: White



S12: Isolation

S11: Black

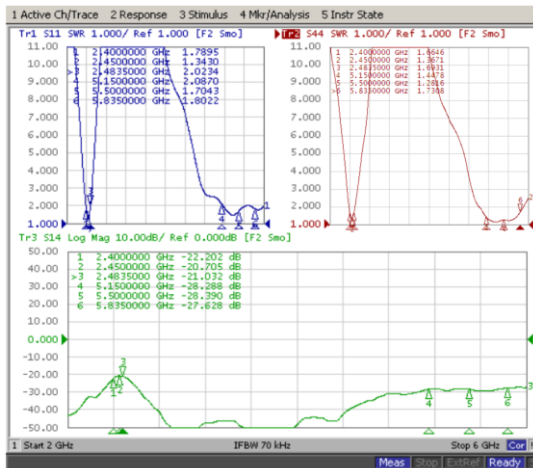
S22: Gray



S12: Isolation

S11: Black

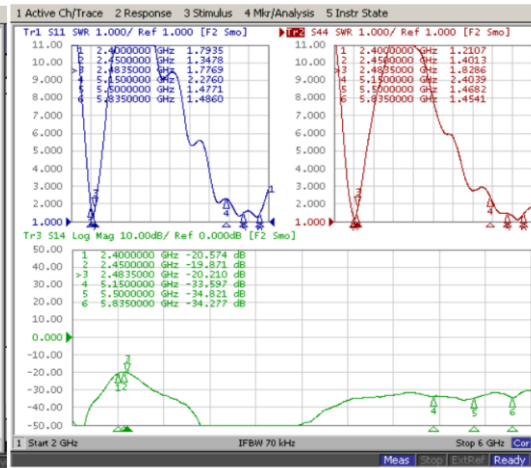
S22: Blue



S12: Isolation

S11: White

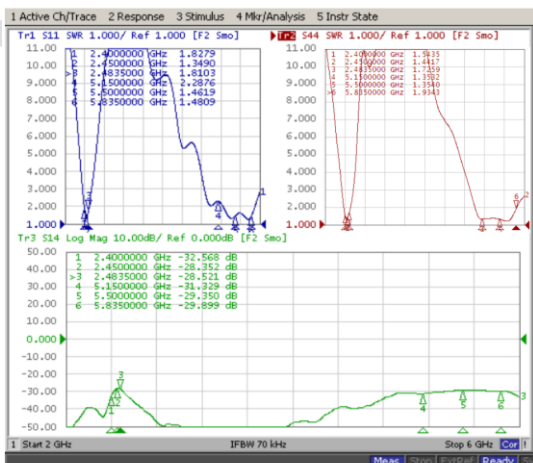
S22: Gray



S12: Isolation

S11: White

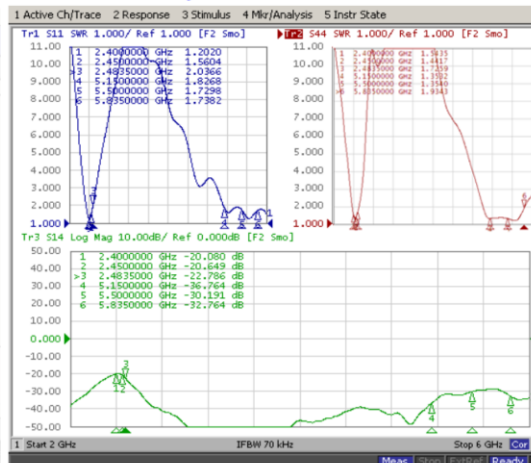
S22: Blue



S12: Isolation

S11: Gray

S22: Blue



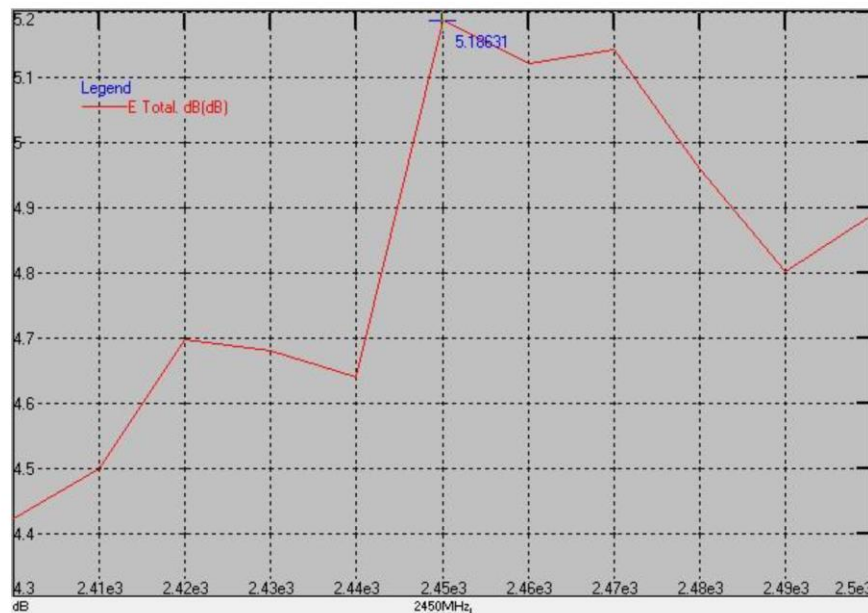
S12: Isolation



3D Peak Gain.....Black→ 5.19dBi(2.4GHz)
→6.76dBi(5GHz)

3D Peak Gain _Black (2G)

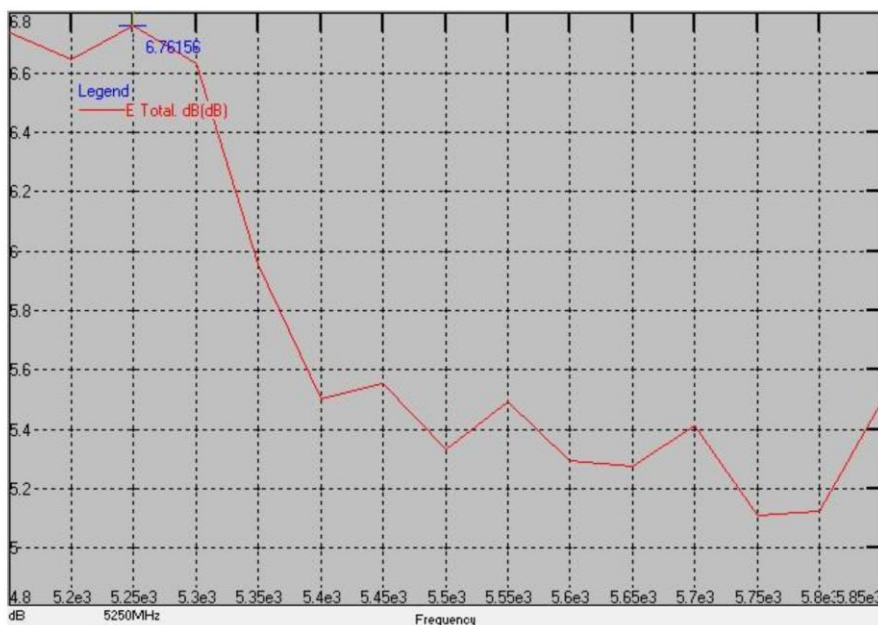
Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
2400	4.42
2410	4.50
2420	4.70
2430	4.68
2440	4.64
2450	5.19
2460	5.12
2470	5.14
2480	4.96
2490	4.80
2500	4.89

3D Peak Gain _Black (5G)

Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
5150	6.74
5200	6.65
5250	6.76
5300	6.63
5350	5.96
5400	5.50
5450	5.55
5500	5.33
5550	5.49
5600	5.29
5650	5.28
5700	5.41
5750	5.11
5800	5.13
5850	5.50

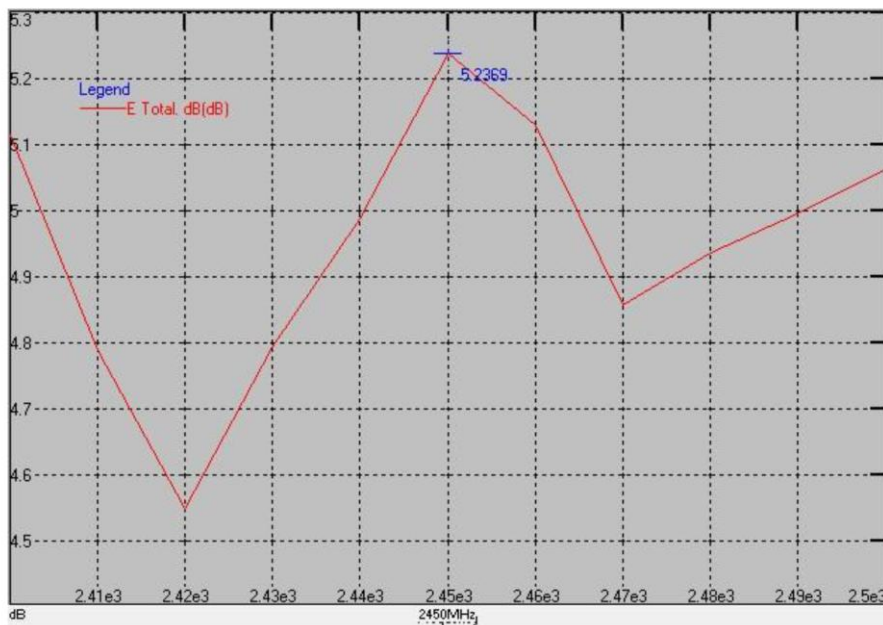


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3D Peak Gain..... White→ 5.24dBi(2.4GHz)
→6.8dBi (5GHz)

3D Peak Gain _White (2G)

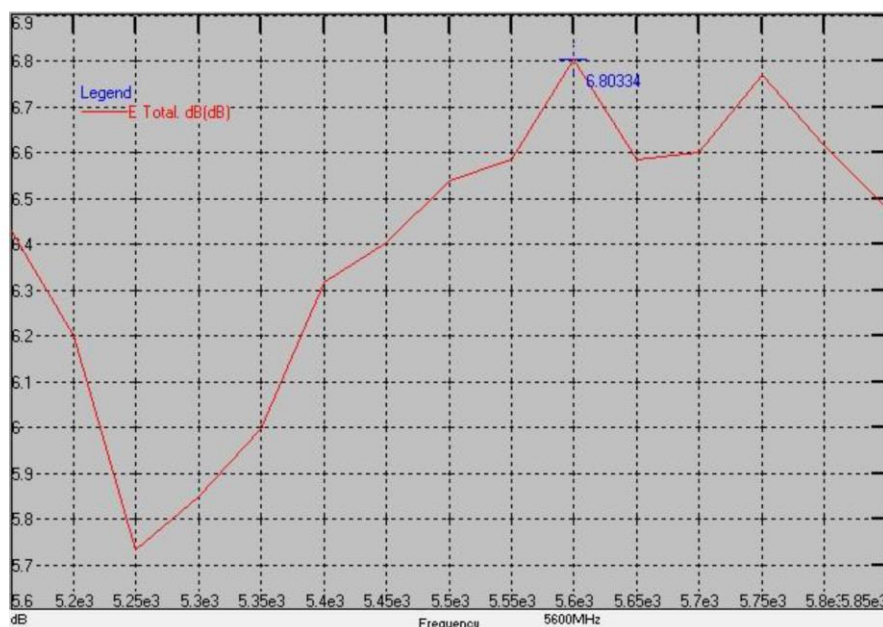
Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
2400	5.11
2410	4.79
2420	4.55
2430	4.79
2440	4.99
2450	5.24
2460	5.13
2470	4.86
2480	4.93
2490	4.99
2500	5.06

3D Peak Gain _White (5G)

Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
5150	6.43
5200	6.20
5250	5.73
5300	5.85
5350	6.00
5400	6.32
5450	6.40
5500	6.54
5550	6.59
5600	6.80
5650	6.59
5700	6.60
5750	6.77
5800	6.62
5850	6.48

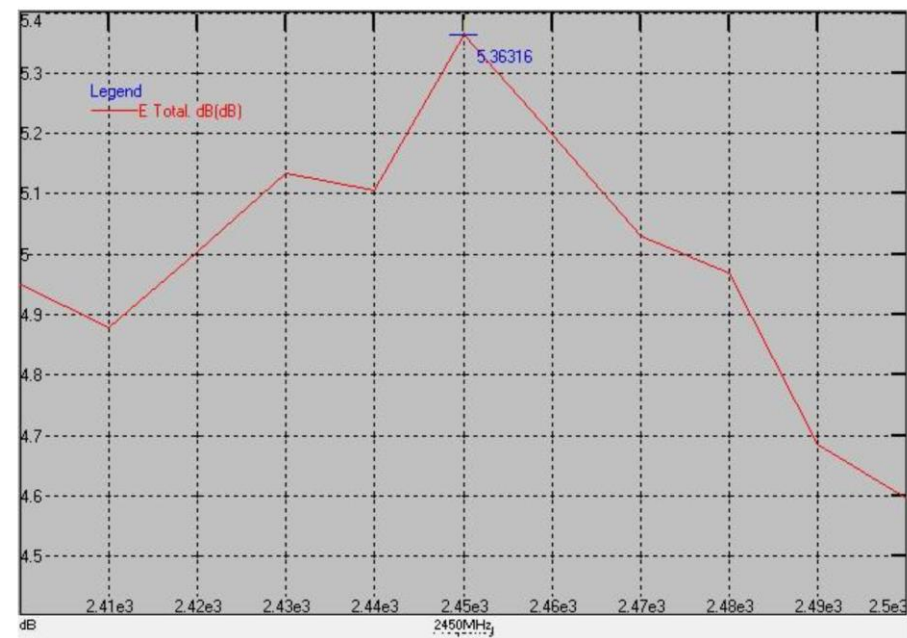


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3D Peak Gain..... Gray→ 5.36 dBi(2.4GHz)
→6.92dBi (5GHz)

3D Peak Gain _Gray (2G)

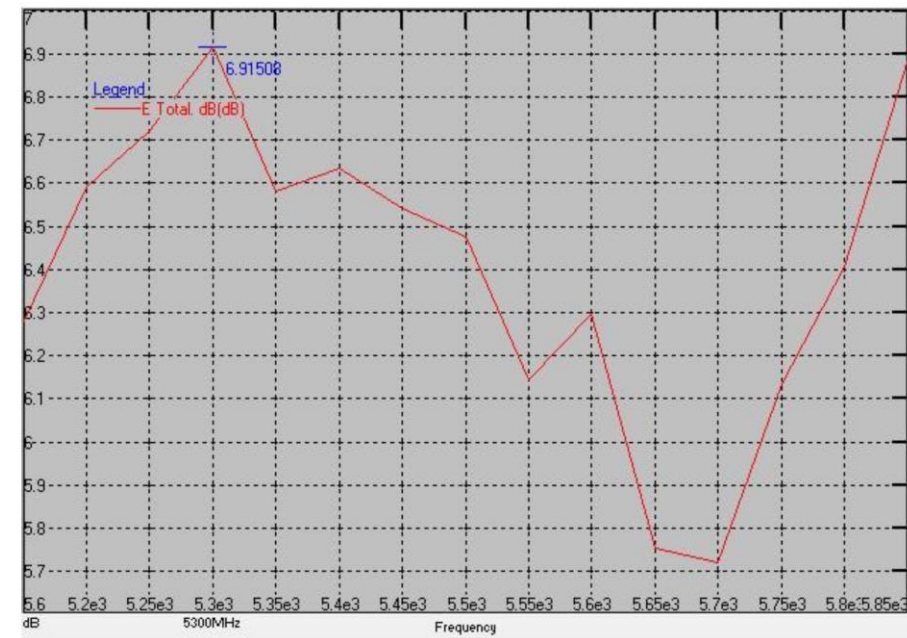
Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
2400	4.95
2410	4.88
2420	5.01
2430	5.13
2440	5.10
2450	5.36
2460	5.20
2470	5.03
2480	4.97
2490	4.69
2500	4.60

3D Peak Gain _Gray (5G)

Mag.Layers

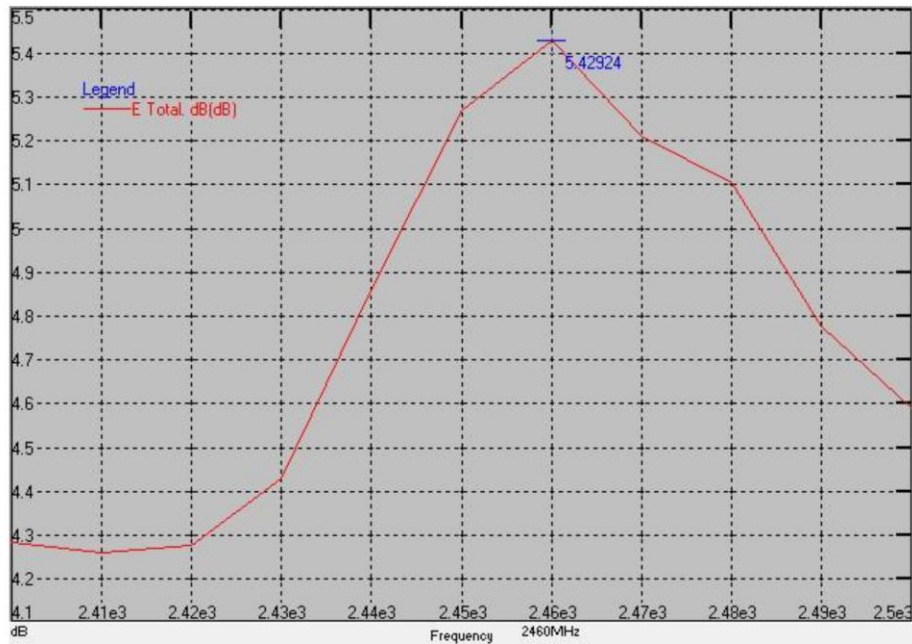


Frequency(MHz)	Peak Gain(dBi)
5150	6.28
5200	6.59
5250	6.72
5300	6.92
5350	6.58
5400	6.64
5450	6.54
5500	6.48
5550	6.15
5600	6.30
5650	5.75
5700	5.72
5750	6.13
5800	6.41
5850	6.89

3D Peak Gain..... Blue→ 5.43 dBi(2.4GHz)
→7.54dBi (5GHz)

3D Peak Gain _Blue (2G)

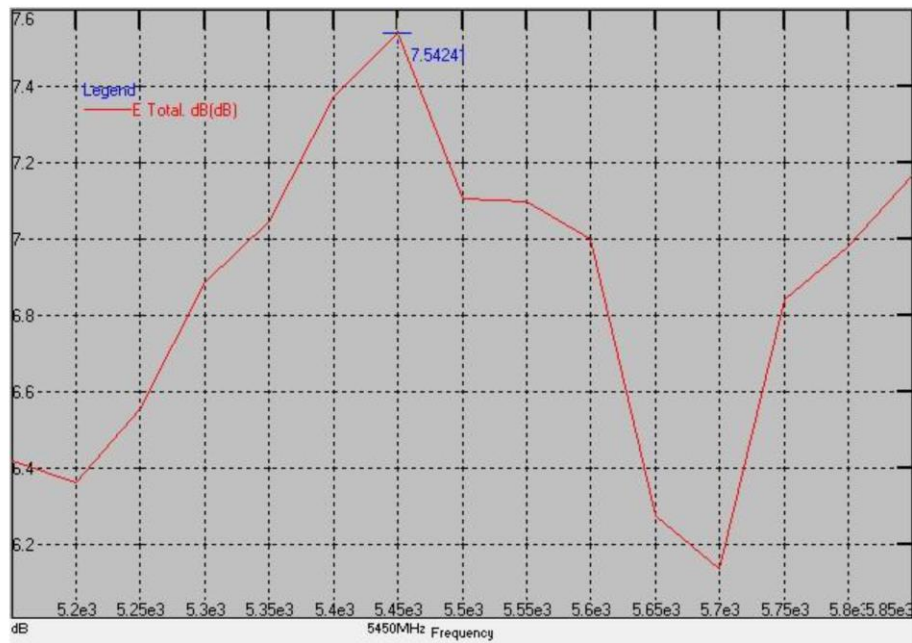
Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
2400	4.28
2410	4.26
2420	4.28
2430	4.43
2440	4.86
2450	5.27
2460	5.43
2470	5.21
2480	5.11
2490	4.78
2500	4.59

3D Peak Gain _Blue (5G)

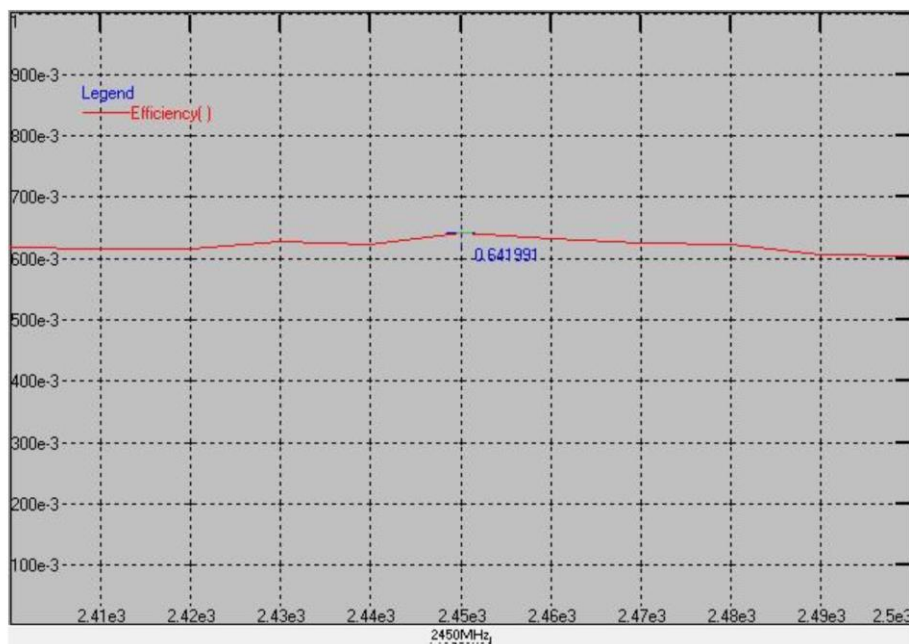
Mag.Layers



Frequency(MHz)	Peak Gain(dBi)
5150	6.42
5200	6.36
5250	6.55
5300	6.89
5350	7.04
5400	7.38
5450	7.54
5500	7.11
5550	7.10
5600	7.00
5650	6.27
5700	6.13
5750	6.84
5800	6.98
5850	7.17

3D Efficiency_Black (2G)

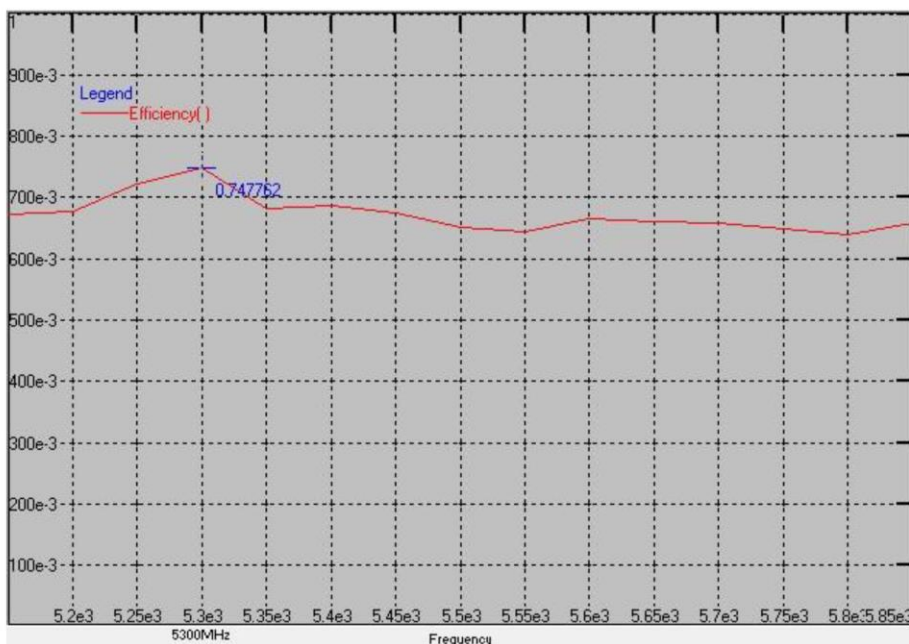
Mag.Layers



Frequency(MHz)	Efficiency
2400	62%
2410	62%
2420	62%
2430	63%
2440	62%
2450	64%
2460	63%
2470	62%
2480	62%
2490	61%
2500	60%

3D Efficiency_Black (5G)

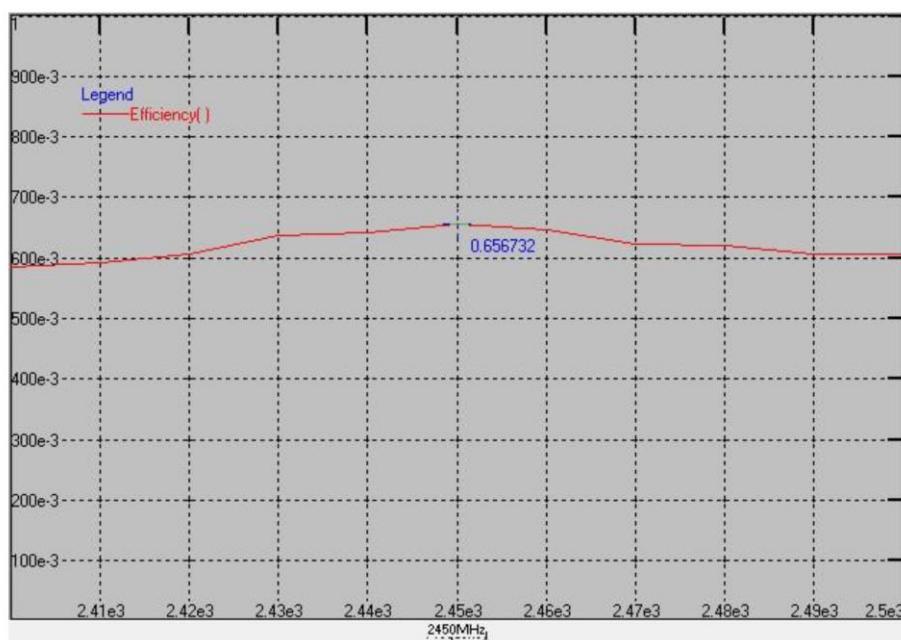
Mag.Layers



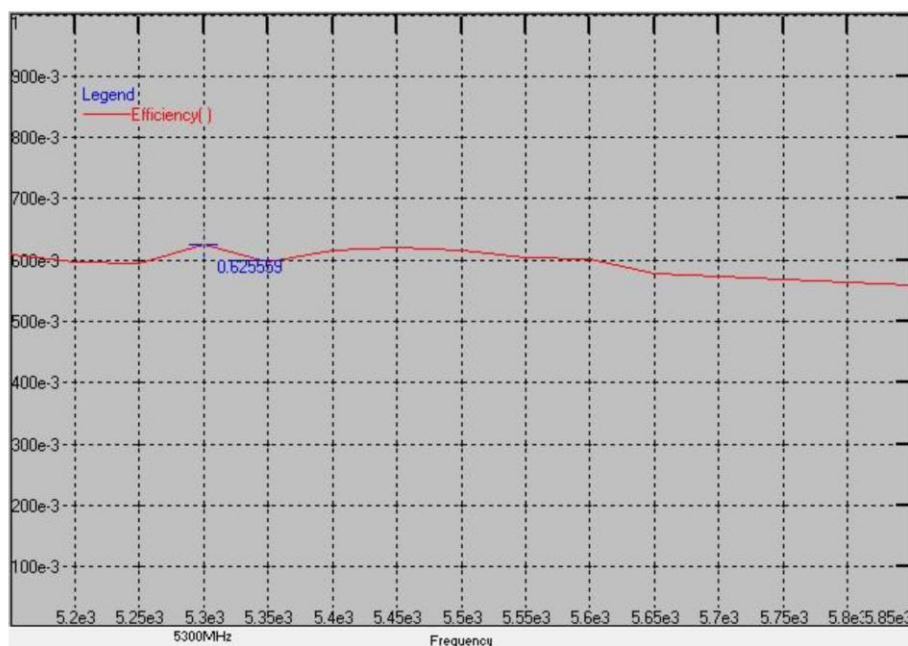
Frequency(MHz)	Efficiency
5150	67%
5200	68%
5250	72%
5300	75%
5350	68%
5400	69%
5450	67%
5500	65%
5550	64%
5600	66%
5650	66%
5700	66%
5750	65%
5800	64%
5850	66%



MAG.LAYERS

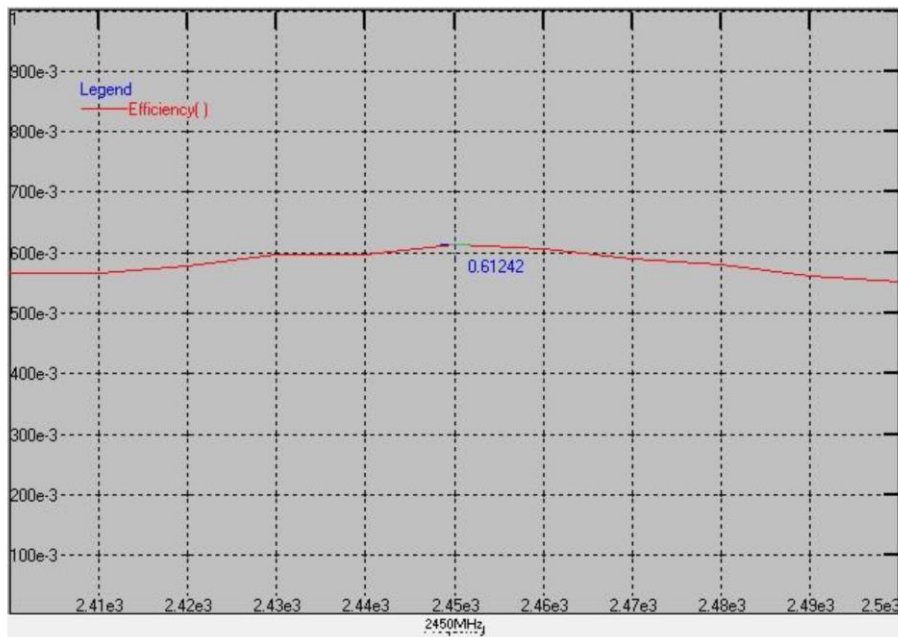


Frequency(MHz)	Efficiency
2400	58%
2410	59%
2420	61%
2430	64%
2440	64%
2450	66%
2460	65%
2470	62%
2480	62%
2490	61%
2500	61%

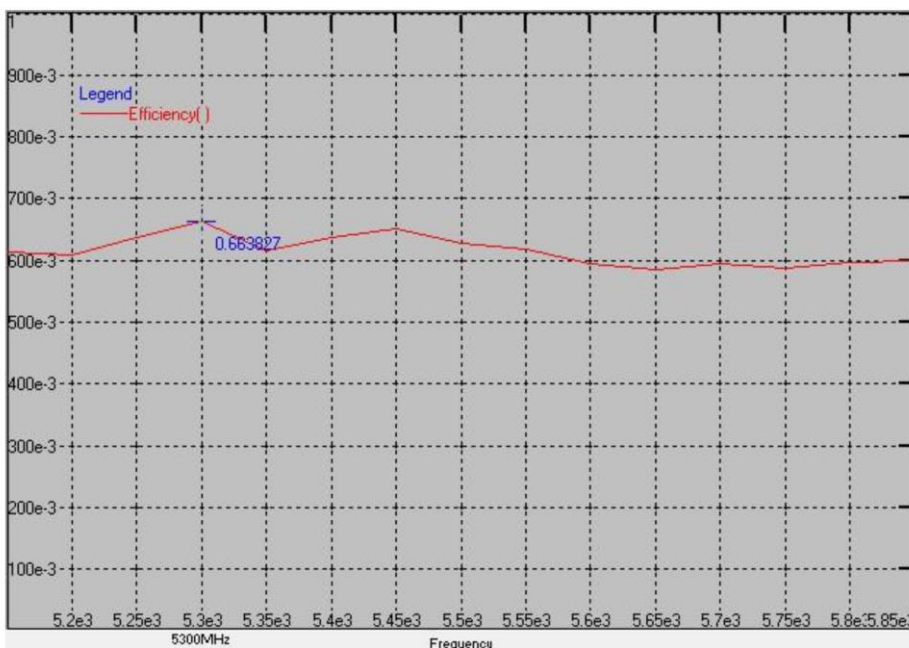


Frequency(MHz)	Efficiency
5150	61%
5200	60%
5250	59%
5300	63%
5350	60%
5400	62%
5450	62%
5500	61%
5550	60%
5600	60%
5650	58%
5700	57%
5750	57%
5800	56%
5850	56%



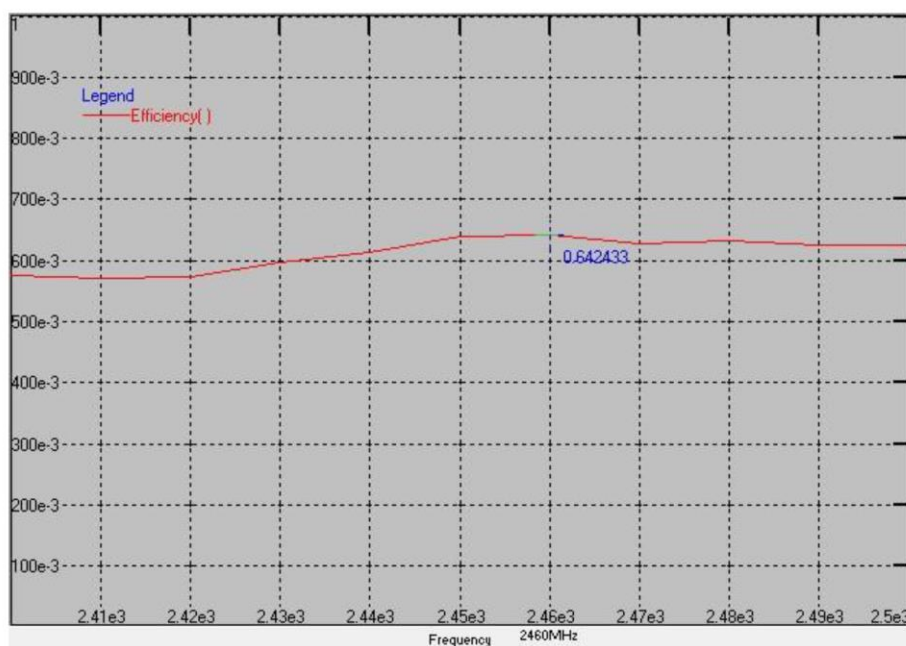


Frequency(MHz)	Efficiency
2400	57%
2410	57%
2420	58%
2430	60%
2440	60%
2450	61%
2460	61%
2470	59%
2480	58%
2490	56%
2500	55%

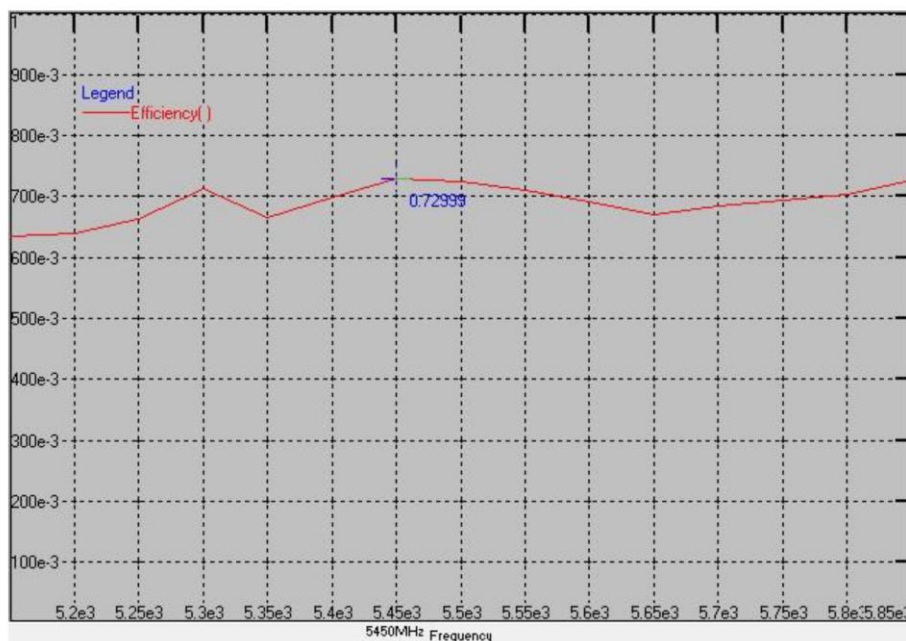


Frequency(MHz)	Efficiency
5150	61%
5200	61%
5250	64%
5300	66%
5350	62%
5400	64%
5450	65%
5500	63%
5550	62%
5600	59%
5650	58%
5700	59%
5750	59%
5800	60%
5850	60%





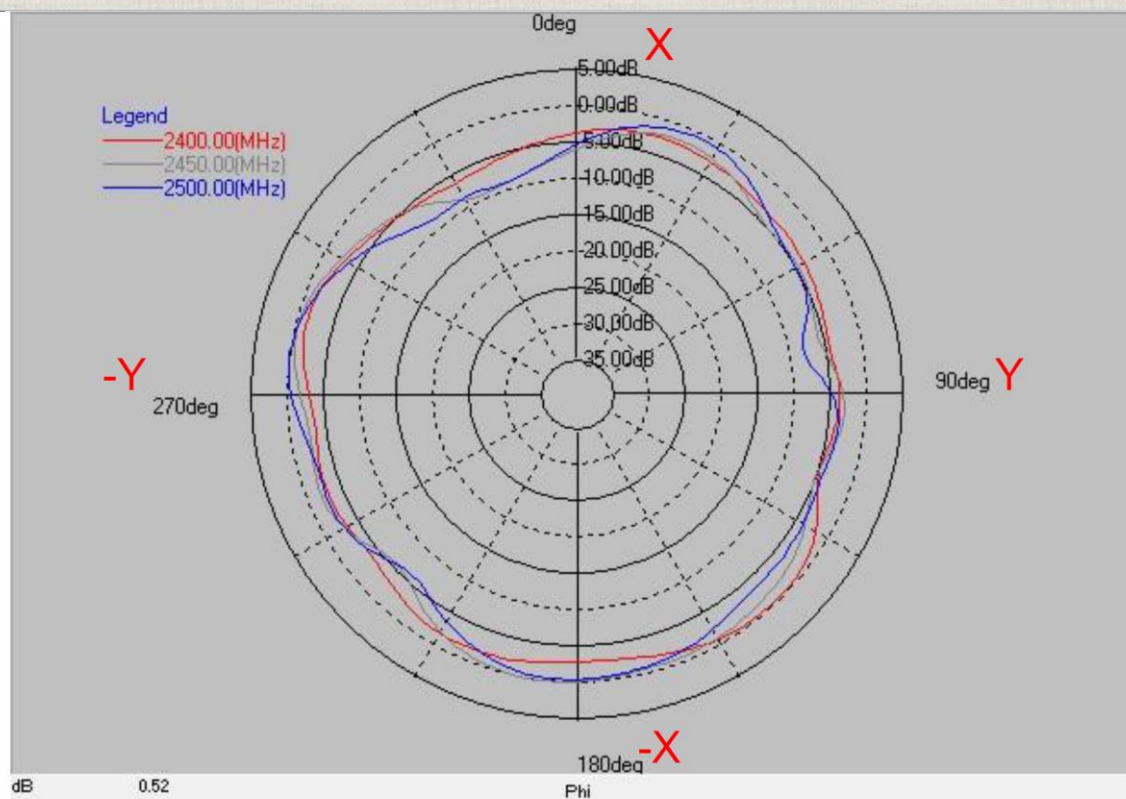
Frequency(MHz)	Efficiency
2400	58%
2410	57%
2420	57%
2430	60%
2440	61%
2450	64%
2460	64%
2470	63%
2480	63%
2490	62%
2500	63%



Frequency(MHz)	Efficiency
5150	64%
5200	64%
5250	66%
5300	71%
5350	67%
5400	70%
5450	73%
5500	72%
5550	71%
5600	69%
5650	67%
5700	69%
5750	69%
5800	70%
5850	73%



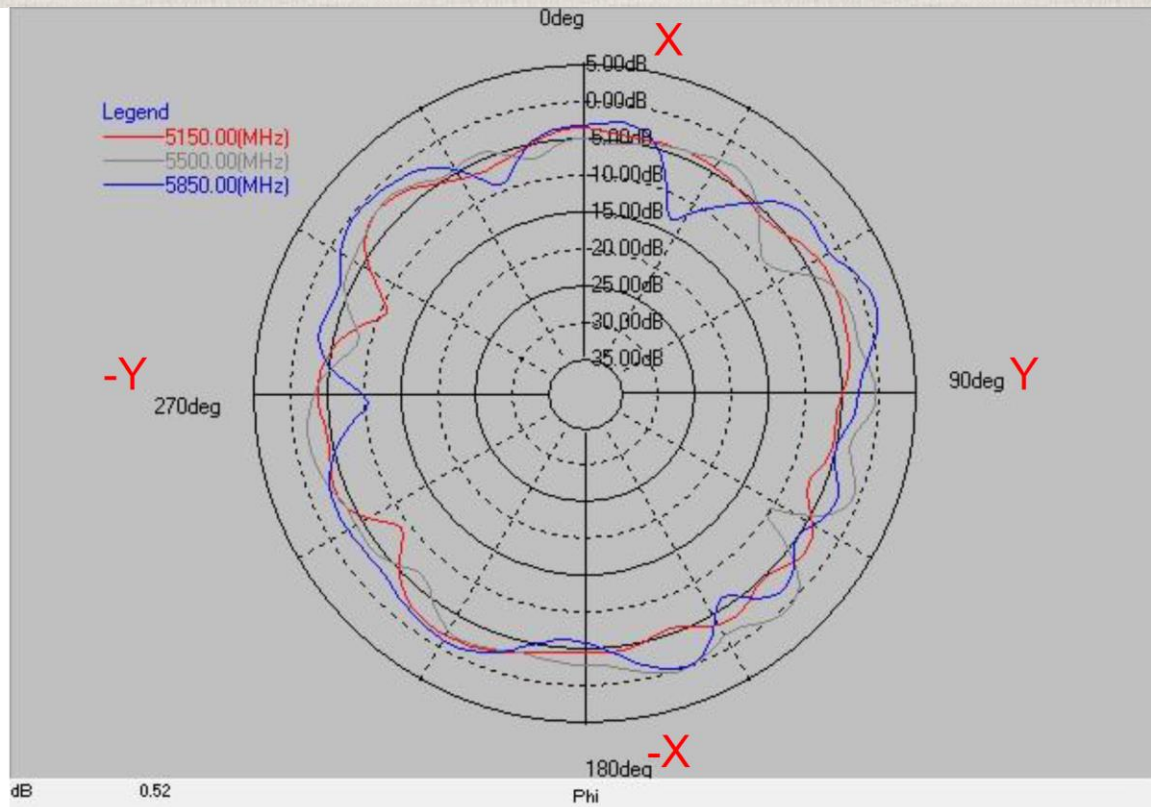
Pattern_Black Antenna_XY Cut(Theta=90)(2G)



Layer	Max value	Min value	Average
2400(MHz)	-0.40 dB	-6.44 dB	-2.98 dB
2450(MHz)	-0.12 dB	-9.67 dB	-2.87 dB
2500(MHz)	0.10 dB	-9.25 dB	-3.14 dB



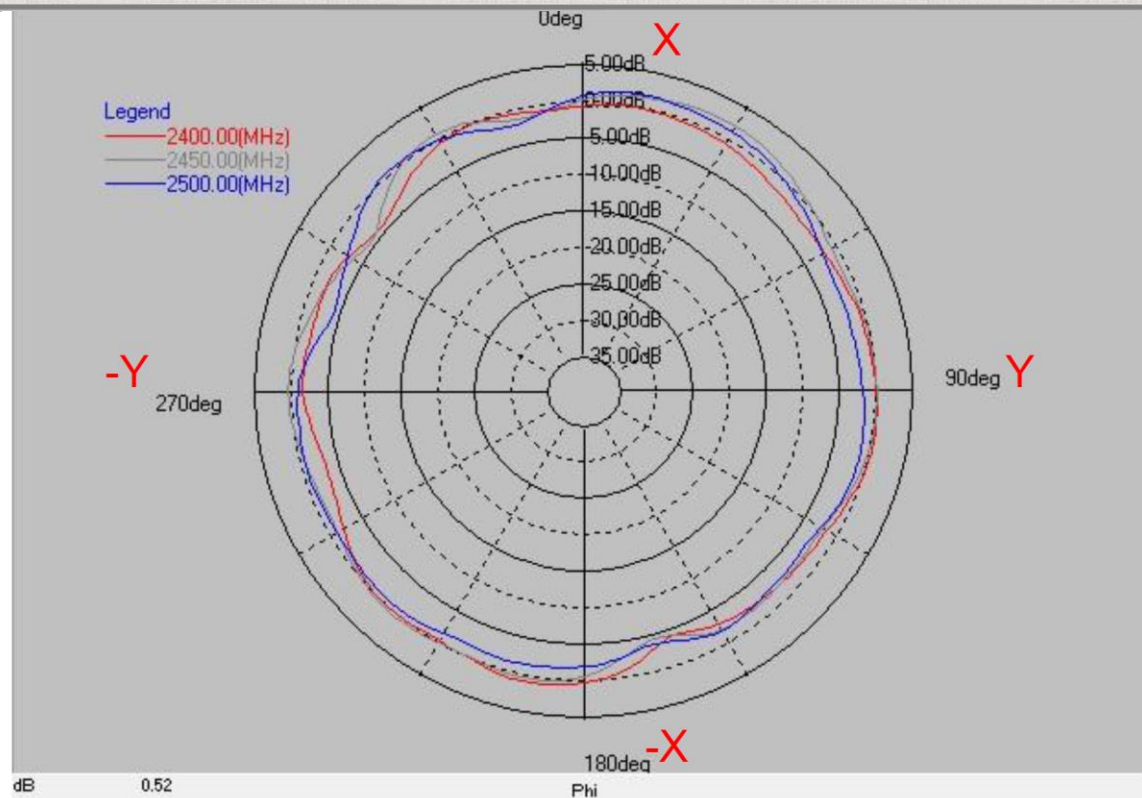
Pattern_Black Antenna _XY Cut(Theta=90)(5G)



Layer	Max value	Min value	Average
5150(MHz)	-1.99 dB	-10.89 dB	-4.42 dB
5500(MHz)	0.38 dB	-10.23 dB	-3.22 dB
5850(MHz)	1.44 dB	-13.58 dB	-3.02 dB



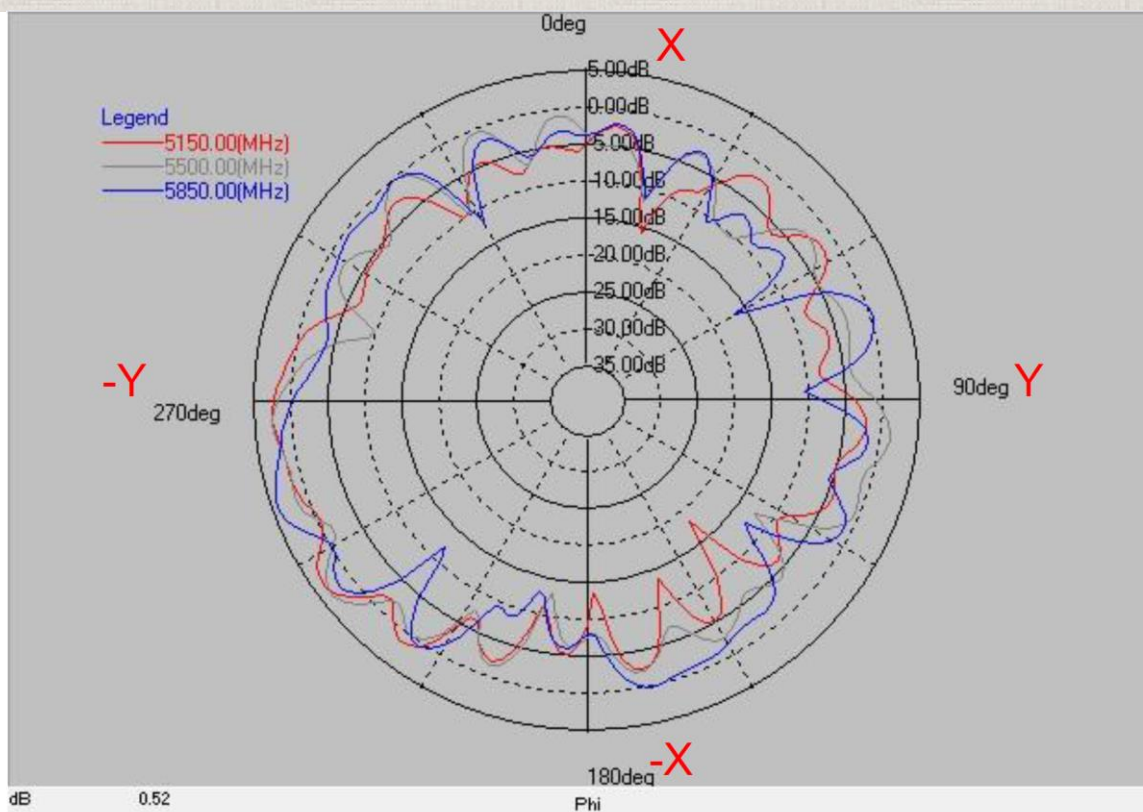
Pattern_White Antenna_XY Cut(Theta=90)(2G)



Layer	Max value	Min value	Average
2400(MHz)	0.71 dB	-4.33 dB	-1.20 dB
2450(MHz)	1.91 dB	-4.69 dB	-0.48 dB
2500(MHz)	1.53 dB	-4.16 dB	-1.15 dB



Pattern_White Antenna_XY Cut(Theta=90)(5G)



Layer	Max value	Min value	Average
5150(MHz)	3.52 dB	-18.40 dB	-2.97 dB
5500(MHz)	3.47 dB	-13.27 dB	-2.35 dB
5850(MHz)	4.16 dB	-16.83 dB	-2.26 dB

