

睿魔

样品承认书

Parts Approval Sheet

生产供应商: 国质信

Supplier

适用项目: CM103

Type/Spec

品 牌: NQI

Brand

送样日期: 2024/10/19

Send out Date

承认日期:

Approve Date

物料名称: ANT1&ANT2 天线

Parts Name

NQI 料号: NQI-CM103-ANT1&ANT2-ASM-V0

Parts No

客户料号: M. E. H. 00106

Quantity

文件编号: NQI-RD-SPEC-20240917

Document No

样品版本: V0

Version

Supplier		Customer	
Approved By	Prepared By	Engineering Dept	Quality Dept

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(Resume)

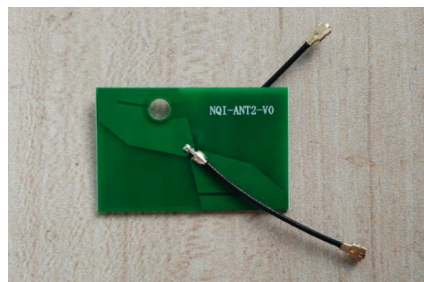
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一.样品图片.电器参数说明及装配方式 (Sample picture and description) :



ANT1

电气参数说明 (Electrical Specifications)	
天线类型(Antenna type)	PCB monopole
天线型号(Antenna model number)	NQI-ANT1-V0
频率范围 (Frequency range)	(2400-2500, 5150-5850)MHz
特性阻抗 (impedance)	50 ohm
电压驻波比 (VSWR)	≤ 2.3
峰值增益 (Gain)	5.79dBi
极化形式 (Polarization)	线性
辐射方向 (Radiation direction)	全向
连接方式说明 (Connection Mode Description)	
连接器 (connector)	/
线缆规格 (Cable specifications)	/
工作/储存温度 (Working/Storage temperature)	
工作温度 (Working temperature)	-30℃ ~ 65℃
储存温度 (Storage temperature)	-30℃ ~ 75℃

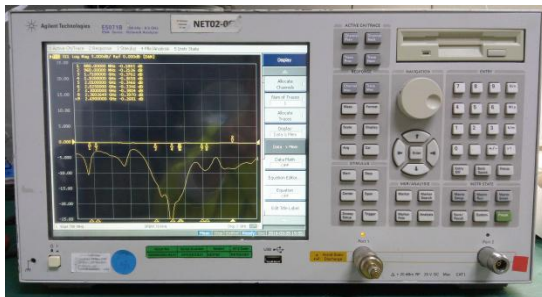
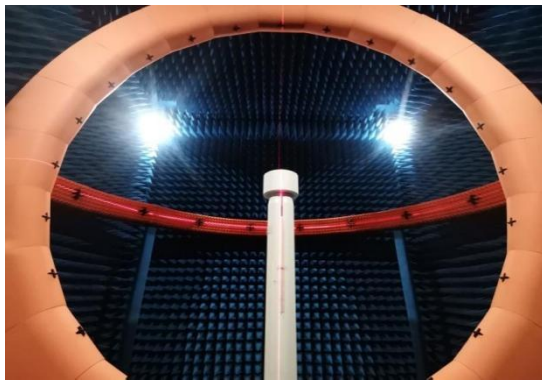
ANT2

电气参数说明 (Electrical Specifications)	
天线类型(Antenna type)	PCB monopole
天线型号(Antenna model number)	NQI-ANT2-V0
频率范围 (Frequency range)	(2400-2500, 5150-5850)MHz
特性阻抗 (impedance)	50 ohm
电压驻波比 (VSWR)	≤ 2.2
峰值增益 (Gain)	5.57dBi
极化形式 (Polarization)	线性
辐射方向 (Radiation direction)	全向
连接方式说明 (Connection Mode Description)	
连接器 (connector)	/
线缆规格 (Cable specifications)	/
工作/储存温度 (Working/Storage temperature)	
工作温度 (Working temperature)	-30℃ ~ 65℃
储存温度 (Storage temperature)	-30℃ ~ 75℃

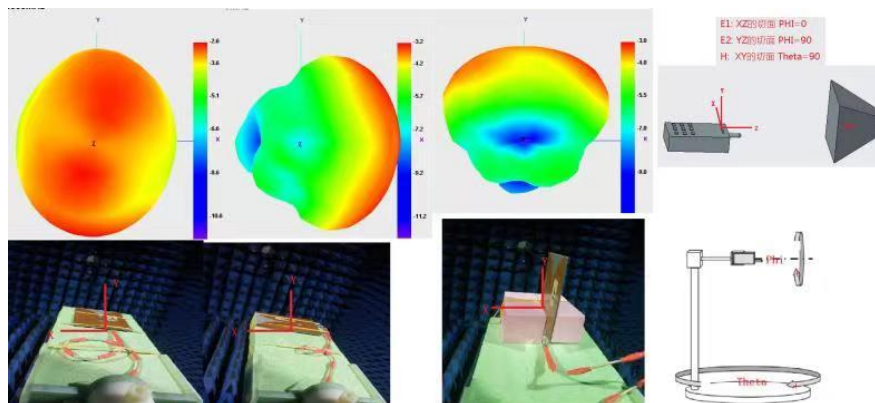


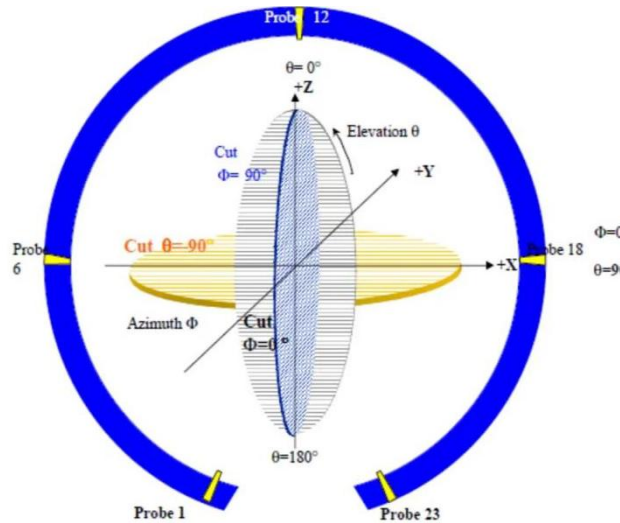
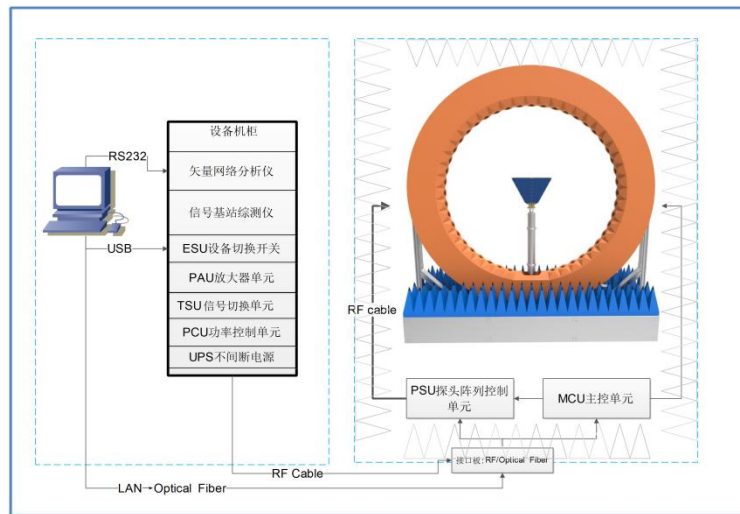
二.测试设备及项目 (Test equipment and items) :

类别 (Class)	测试项目 (Test item)	设备 (Equipment)
1. S parameter	1. 回波损耗(RL) 2. 驻波比 (VSWR) 3.斯密斯原图(Smith chart)	网分 (VNA) : Agilent E5071B R&S ZVB8 Protek A333
2. 耦合测试 (Coupling testing)	1. 发射功率 (MAX Power) 2. 接收灵敏度 (MIN Sens)	1.2G/3G Tester: Agilent 8960 2.The coupling box: TESCOM TC-5060A 3. 3D Chamber: ETS 3D Chamber (5x3x3)
3. 3D 无源测试 (Passive Test)	1. 效率 (Effeciency) 2. 增益 (Gain) 3.辐射方向图 (Radiation pattern)	1. 3D Chamber: TEM24 3D Chamber (5x5x5) ETS 3D Chamber (5x3x3) 2. 网分 (VNA) : Agilent E5071B R&S ZVB8
4.3D 有源测试 (Active Test)	1. 3D 功率 (TRP) 2. 3D 灵敏度 (TIS) 3.吞吐率 (Throughput rate)	1. 3D Chamber: TEM24 3D Chamber (5x5x5) ETS 3D Chamber (5x3x3) 2.2G/3G Tester: Agilent 8960 3.4G Tester: MT8820C/CMW500 4.WIFI/BT/NB-iot Tester: CMW500 5. 5G Tester: SP9500-CTS 6.Head: HEAD-P10 (FACE-P10)

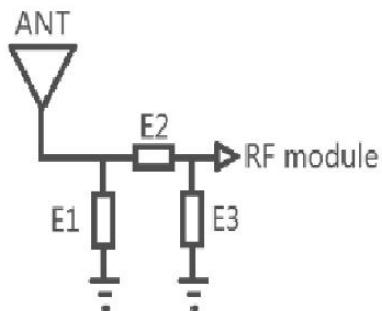


三.暗室连接及坐标 (Chamber connection and coordinates) :





四.天线匹配网络 (Antenna matching network) :



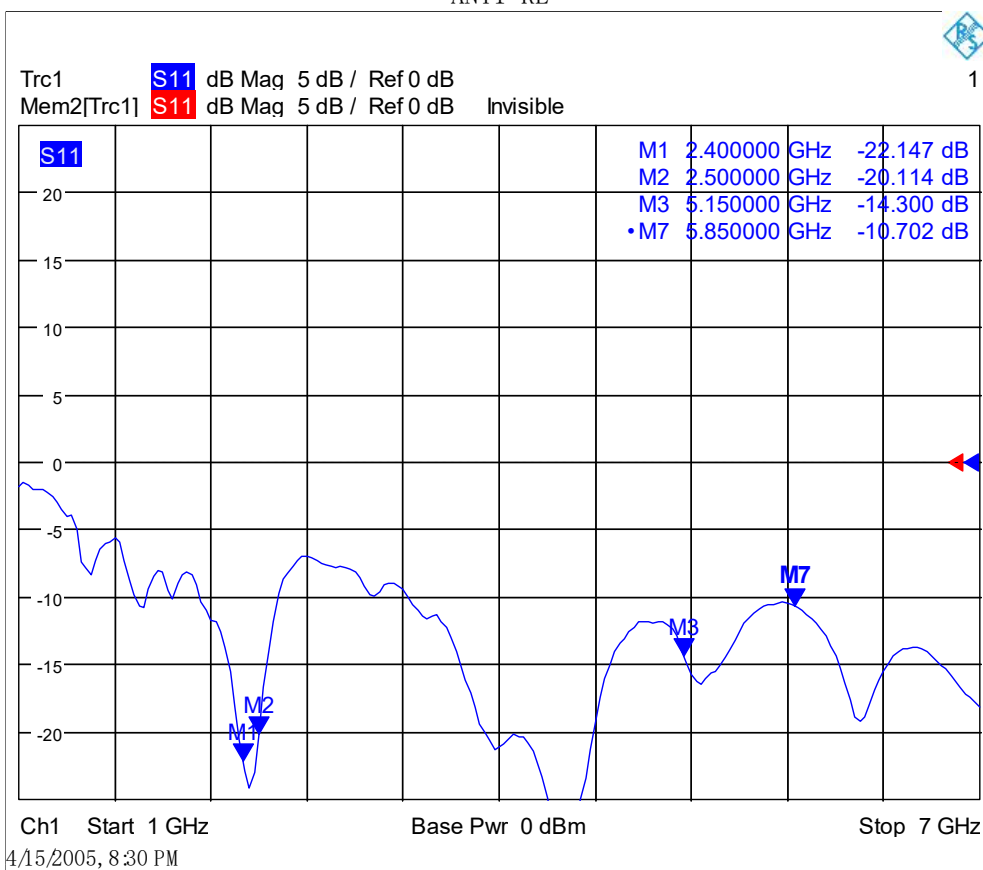
Element	ANT1 (Value)	ANT2 (Value)
E1	NC	NC
E2	10PF	10PF
E3	NC	NC

五.天线电性能测试数据 (Antenna electrical performance test data) :

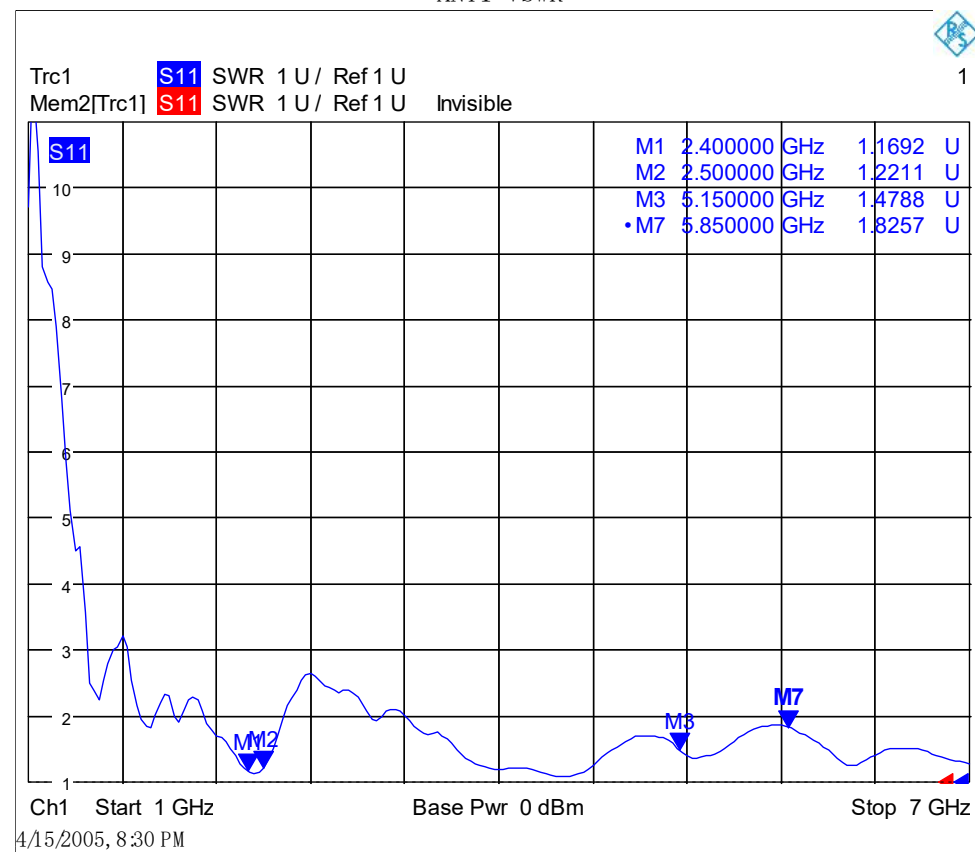
5.1..天线回波损耗/驻波比 (RL/VSWRt)



ANT1 RL



ANT1 VSWR



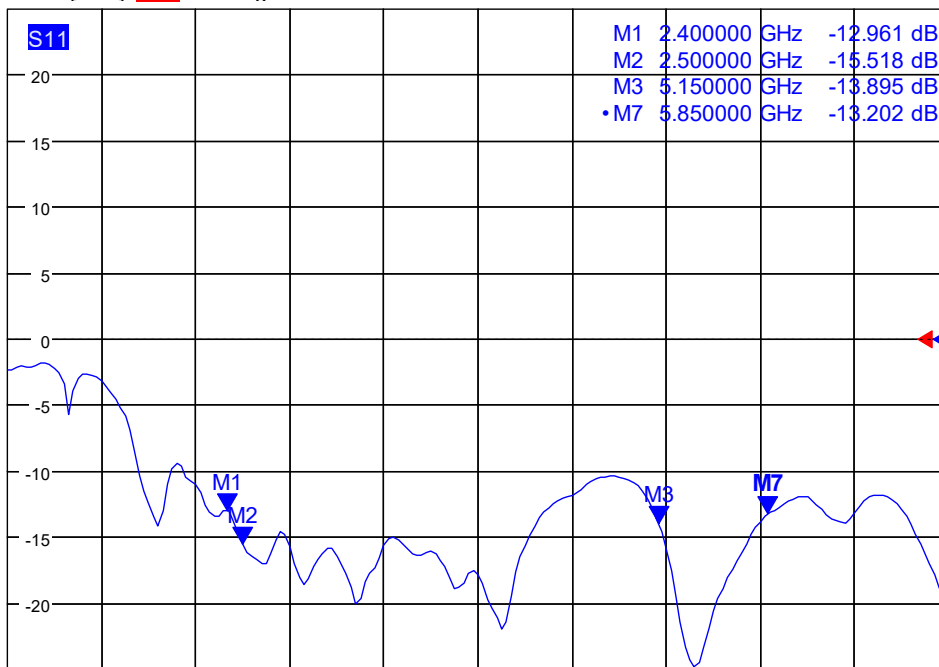


ANT2 RL



Trc1 S11 dB Mag 5 dB / Ref 0 dB
Mem2[Trc1] S11 dB Mag 5 dB / Ref 0 dB Invisible

1



Ch1 Start 1 GHz

Base Pwr 0 dBm

Stop 7 GHz

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ANT2 VSWR



Trc1 S11 SWR 1 U / Ref 1 U
Mem2[Trc1] S11 SWR 1 U / Ref 1 U Invisible

1



Ch1 Start 1 GHz

Base Pwr 0 dBm

Stop 7 GHz

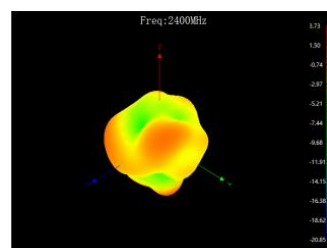
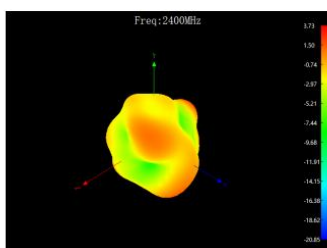
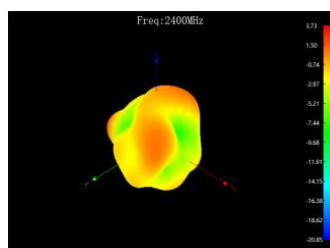
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5.2. 天线效率/增益 (Effeciency/Gain)

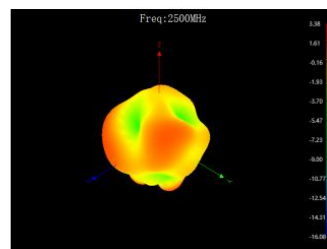
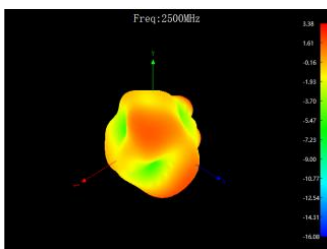
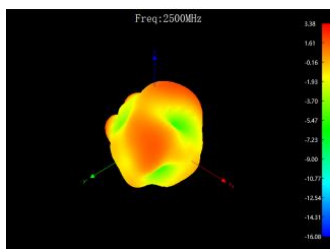
ANT1

Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)
2400	53.32	3.73	5250	53.83	2.41	5570	60.53	4.24
2410	51.46	3.12	5270	55.34	2.24	5590	59.16	4.08
2420	53.1	3.54	5290	58.21	2.54	5610	57.02	4.04
2430	51.97	3.19	5310	59.84	3.35	5630	57.68	3.87
2440	51	2.9	5330	60.53	2.87	5650	56.49	3.89
2450	51.87	2.82	5350	61.38	2.74	5670	55.08	3.96
2460	50.47	2.84	5370	60.12	2.7	5690	55.59	4.23
2470	52.36	3.4	5390	56.1	2.27	5710	52.48	3.95
2480	52	3.25	5410	58.61	2.88	5730	50.82	4.07
2490	54.45	3.82	5430	54.83	2.81	5750	53.46	4.32
2500	53.95	3.38	5450	56.1	2.8	5770	54.2	4.59
5150	61.38	3.11	5470	56.62	3.16	5790	58.08	4.91
5170	57.94	2.47	5490	58.34	3.47	5810	60.26	5.34
5190	58.75	2.96	5510	59.84	3.69	5830	60.26	5.79
5210	56.1	2.98	5530	59.84	3.81	5850	57.81	5.26
5230	52.97	3.55	5550	58.75	4.02			

2400MHZ

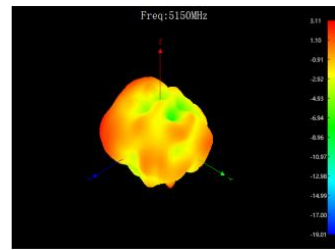
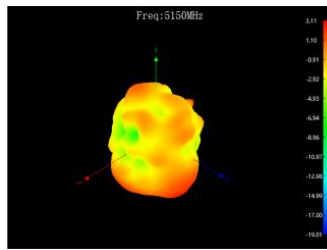
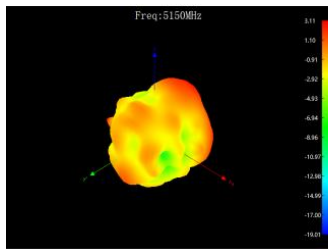


2500MHZ

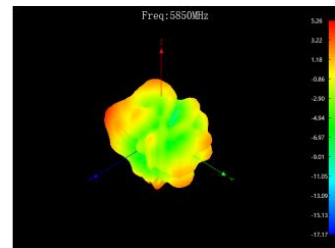
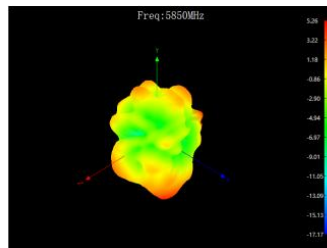
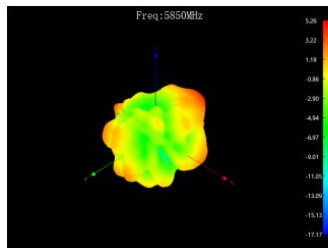




5150MHZ



5850MHZ

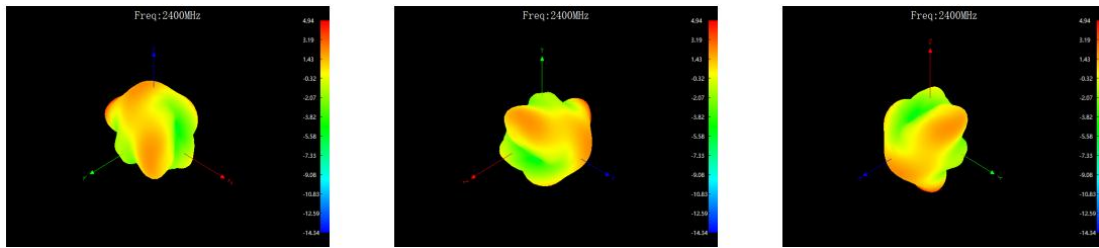


ANT2

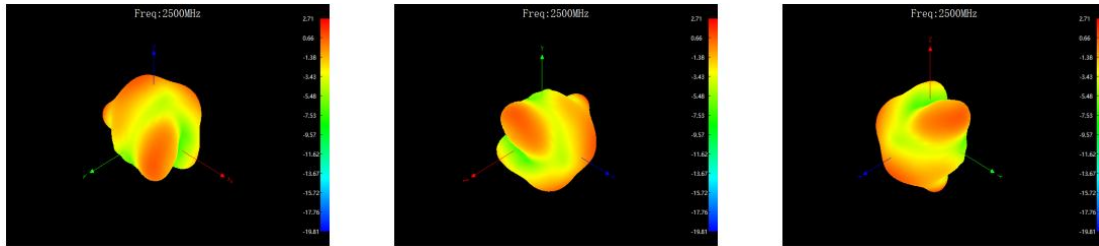
Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)
2400	49.09	4.94	5250	55.08	4.41	5570	64.42	5.14
2410	44.98	4.33	5270	54.33	4.7	5590	62.66	4.53
2420	46.34	4.41	5290	55.46	4.45	5610	61.38	3.59
2430	44.57	3.6	5310	55.72	4.81	5630	63.1	4.16
2440	44.98	3.58	5330	57.02	5.07	5650	61.8	3.68
2450	42.85	3.34	5350	57.94	5.08	5670	60.81	3.6
2460	42.56	3.31	5370	60.26	4.97	5690	63.1	4.27
2470	43.55	3.48	5390	57.54	4.78	5710	60.67	4.49
2480	42.76	3.16	5410	60.95	4.74	5730	59.57	4.14
2490	44.46	3.22	5430	56.49	4.32	5750	61.94	4.41
2500	42.85	2.71	5450	57.54	4.66	5770	63.53	4.68
5150	59.57	3.71	5470	57.28	4.43	5790	64.86	4.67
5170	57.28	3.66	5490	58.08	4.61	5810	66.68	5
5190	60.81	4.36	5510	59.43	4.67	5830	67.14	5.57
5210	59.02	4.21	5530	59.43	4.32	5850	64.12	5.22
5230	57.28	4.73	5550	61.52	4.88			



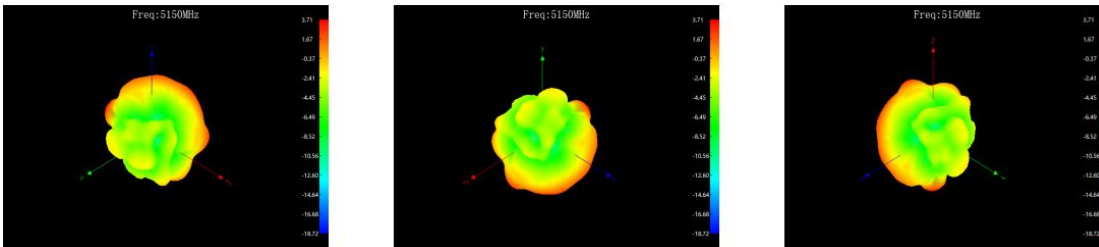
2400MHZ



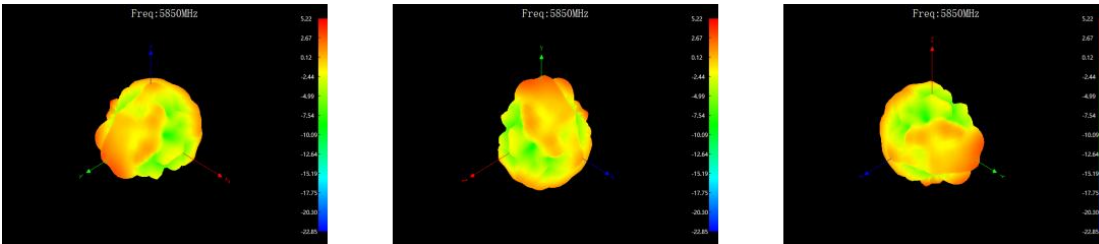
2500MHZ



5150MHZ



5850MHZ



六. TRP&TIS

NQI ANT TRP&TIS parameter Summary of CM103			
BAND	WIFI-B		
CHANNEL	1	6	11
TRP (dBm)	15.43	15.03	15.11
TIS (dBm)	-81.77	-80.63	-81.33
BAND	WIFI-A		
CHANNEL	36	149	165
TRP (dBm)	21.27	18.27	18.56
TIS (dBm)	-71.56	-78.72	-76.84



七.天线结构图纸 (Antenna structure drawing) :

