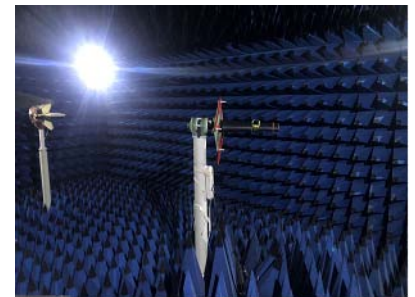


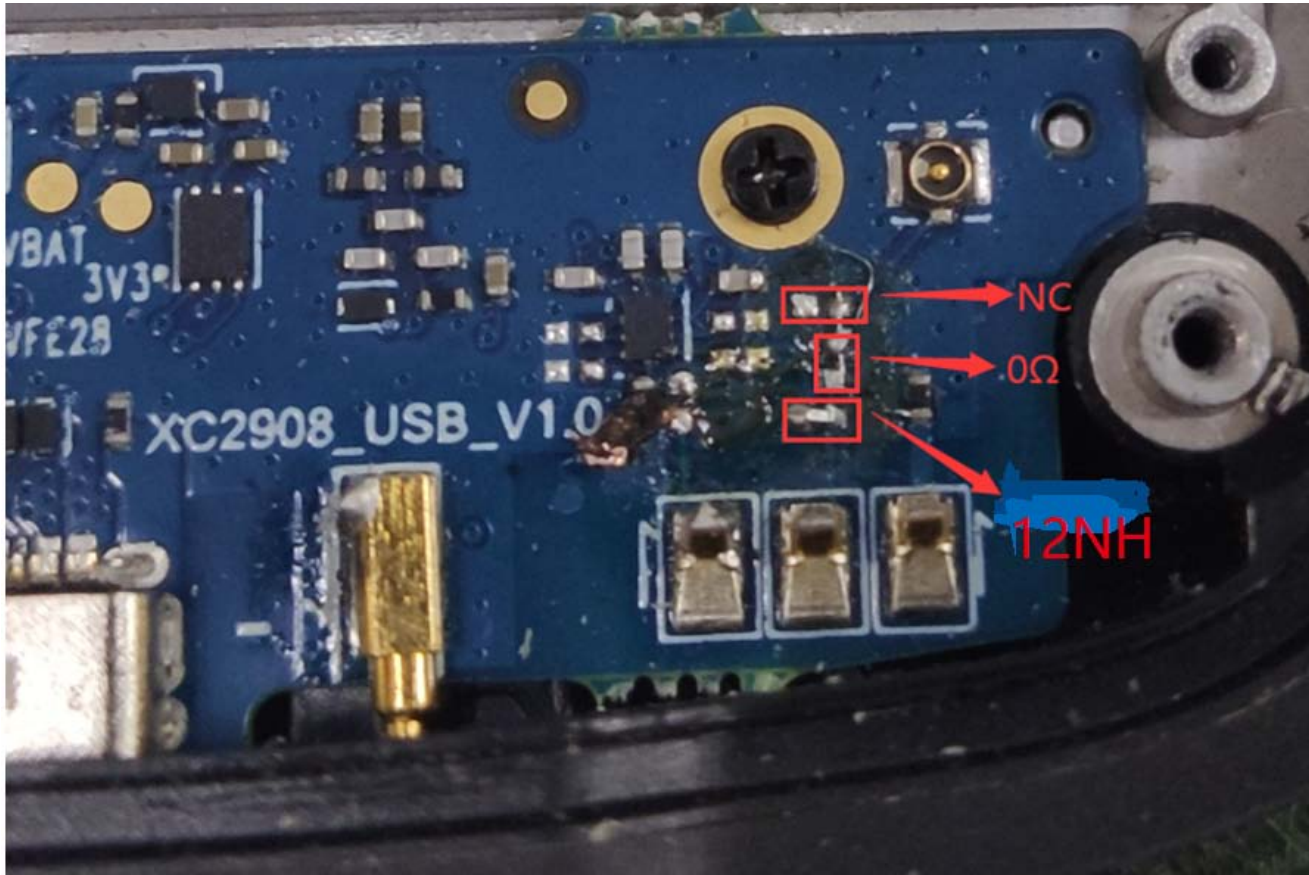
Model: Antenna_XC2908



Brief introduction

Band	main antenna	Band		Material	
		2G	GSM: B2/3/5/8		FPC
		3G	WCDMA: 1/2/5/8		
	4G	FDD: 1/2/3/4/5/7/8/12/17/20/28A/28B TDD: 34/38/39/40/41			
	Other antennas	GWB	2.4GHz/5.8GHz/GPS1575 MHz		FPC
		DRX	Yes		FPC

Small board matching



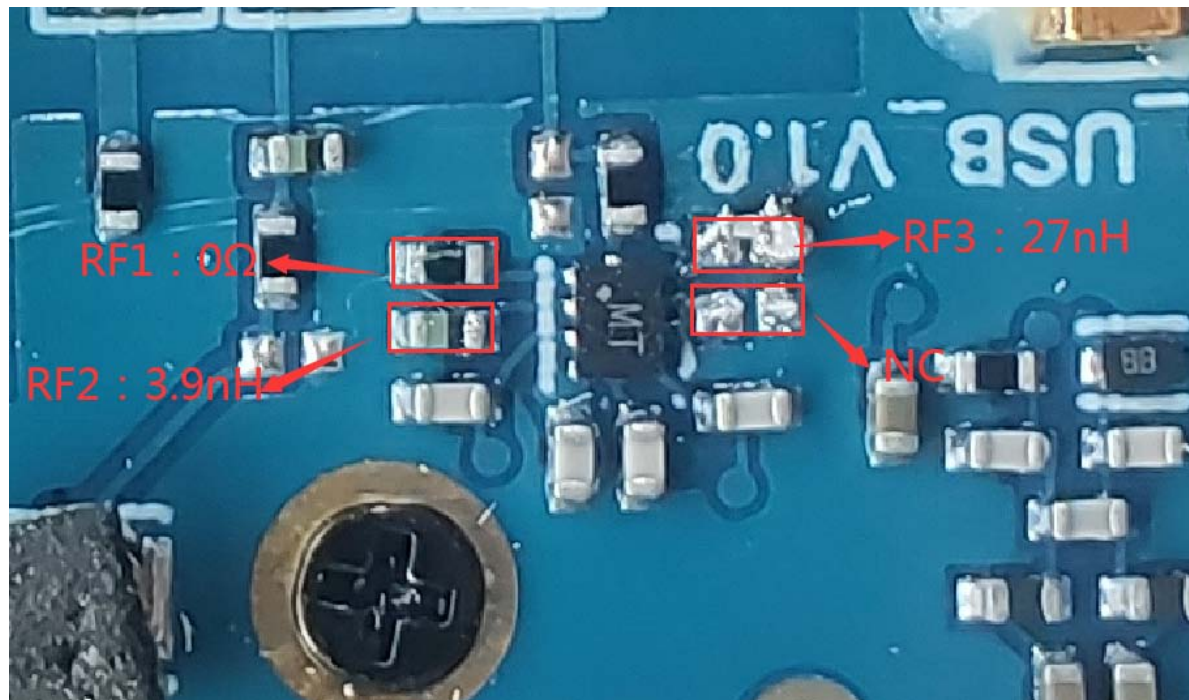
Switch logic

Switch logic

RF1: $0\ \Omega$ GSM900/1900, WCDMA B1/2/8, FDD B1/2/7/8, TDD B38/39/40/41, TD34/39

RF2: 3.9nH GSM850/1800, WCDMA B5, FDD B3/4/5/20

RF3: 27nH FDD B12/17/28AB



Active parameters of main antenna

Test	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
TRP (dBm)	24.75	25.03	25.18	25.21	25.13	25.04
TIS (dBm)			-100.17			-102.05

Test	EGSM 900			DCS 1800		
Channel	1	62	124	512	698	885
TRP (dBm)	25.04	25.16	25.06	24.68	24.76	25.08
TIS (dBm)			-100.15			-102.07

Active parameters of main antenna

Test	WCDMA_I			WCDMA_II		
Channel	10562	10700	10838	9662	9800	9938
TRP (dBm)	16.51	16.33	16.12	16.38	16.25	16.13
TIS (dBm)			-102.56			-103.02

Test	WCDMA_V			WCDMA_VIII		
Channel	4357	4408	4458	2937	3013	3088
TRP (dBm)	15.04	15.15	15.07	15.02	15.17	15.09
TIS (dBm)			-101.21			-101.13

Active parameters of main antenna

Test	FDD B1			FDD B2		
Channel	18050	18300	18550	18700	18900	19100
TRP (dBm)	18.02	17.71	17.53	18.31	18.03	17.74
TIS (dBm)			-90.05			-91.53

Test	FDD B3			FDD B4		
Channel	19250	19575	19900	20050	20175	20350
TRP (dBm)	17.03	17.15	17.26	17.02	17.17	17.25
TIS (dBm)			-92.09			-91.04

Test	FDD B5			FDD B7		
Channel	20450	20525	20600	20800	21100	21400
TRP (dBm)	15.03	15.17	15.26	18.33	18.05	17.78
TIS (dBm)			-87.02			-90.01

Active parameters of main antenna

Test	FDD B8			FDD B12		
Channel	21500	21650	21750	23035	23095	23155
TRP (dBm)	15.28	15.19	15.05	14.01	14.19	14.31
TIS (dBm)			-87.08			-87.06

Test	FDD B17			FDD B20		
Channel	23780	23790	23800	24200	24300	24400
TRP (dBm)	14.02	14.17	14.29	15.04	15.18	15.25
TIS (dBm)			-87.05			-87.11

Test	FDD B28A			FDD B28B		
Channel	27260	27360	27460	27410	27510	27610
TRP (dBm)	14.03	14.22	14.36	14.05	14.21	14.33
TIS (dBm)			-87.09			-87.12

Active parameters of main antenna

Test	FDD B34		
Channel	36250	36275	36300
TRP (dBm)	17.35	17.21	17.04
TIS (dBm)			-91.19

Test	TDD B38			TDD B39		
Channel	37850	38000	38150	38350	38450	38550
TRP (dBm)	18.05	17.76	17.52	18.54	18.76	19.11
TIS (dBm)			-89.04			-91.08

Test	TDD B40			FDD B41		
Channel	38750	39150	39550		40620	
TRP (dBm)	16.58	17.55	18.19		18.02	
TIS (dBm)			-90.15		-90.03	

WiFi active parameters

Test	5.8WIFI-A			2.4WIFI-B		
Channel	149	157	165	1	6	11
TRP (dBm)	10.06	10.27	10.12	12.53	12.75	13.01
TIS (dBm)			-70.05			-85.09

Test	2.4WIFI-G			2.4WIFI-N		
Channel	1	6	11	1	7	13
TRP (dBm)	12.28	12.52	12.74	12.04	12.25	12.39
TIS (dBm)			-70.11			-67.18

Antenna gain

Band	Gain (MAX)
GSM850	0.65
EGSM900	0.61
DCS1800	1.07
PCS1900	1.11
WCDMA B1	1.15
WCDMA B2	1.11
WCDMA B5	0.65
WCDMA B8	0.61
Band1	1.15
Band2	1.11
Band3	1.07
Band4	1.02
Band5	0.65
Band7	1.21
Band8	0.61
Band12	0.53

Band	Gain (MAX)
Band17	0.53
Band20	0.65
Band28A	0.54
Band28B	0.54
Band34	1.11
Band38	1.21
Band39	1.11
Band40	1.18
Band41	1.21
GPS	1.01
2.4GWiFi	1.18
BT	1.18
5GWiFi	1.29

Four in one antenna efficiency

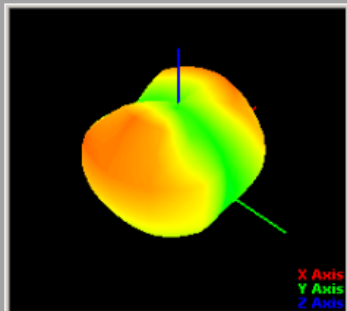
Passive Test			
GPS		2.4G	
Freq	Effi	Freq	Effi
(MHz)	(%)	(MHz)	(%)
1550.0	26.2%	2400.0	42.3%
1560.0	27.5%	2420.0	42.8%
1570.0	28.9%	2440.0	43.4%
1575.0	30.1%	2460.0	44.5%
1580.0	28.5%	2480.0	43.3%
1590.0	27.3%	2500.0	42.2%

Passive Test			
5G			
Freq	Effi	Freq	Effi
(MHz)	(%)	(MHz)	(%)
5100.0	40.5%	5460.0	42.7%
5160.0	40.9%	5520.0	43.1%
5220.0	41.2%	5580.0	42.0%
5280.0	41.7%	5640.0	41.8%
5340.0	42.6%	5700.0	40.6%
5400.0	42.6%	5760.0	40.1%

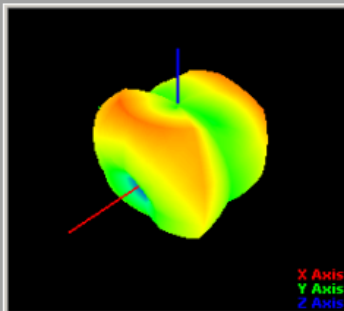
Diversity antenna efficiency

Passive Test			
GPS		2.4G	
Freq	Effi	Freq	Effi
(MHz)	(%)	(MHz)	(%)
1700.0	20.3%	2300.0	25.5%
1740.0	21.3%	2340.0	26.0%
1780.0	22.1%	2380.0	27.1%
1820.0	24.6%	2420.0	28.3%
1860.0	24.2%	2460.0	30.0%
1900.0	25.3%	2500.0	28.2%
1940.0	28.1%	2540.0	27.0%
1980.0	23.7%	2580.0	26.7%
2020.0	24.7%	2620.0	23.8%
2060.0	24.5%	2660.0	21.0%
2100.0	23.5%	2700.0	20.3%
2140.0	28.0%		
2180.0	30.2%		
2220.0	27.2%		
2260.0	25.1%		

Passive parameter – apple chart–700MHz–824MHz

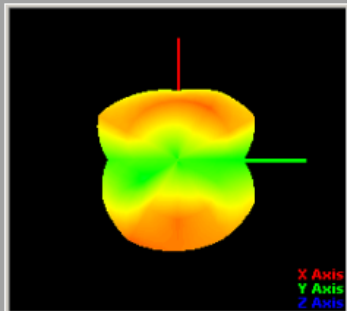


0.5
-3.36
-7.21
-11.07
-14.92
-18.78
-22.64
-26.49
-30.35
-34.2
-38.06
-41.91
-45.77
-49.62
-53.48
-57.34
-61.19
-65.05



T45-P45

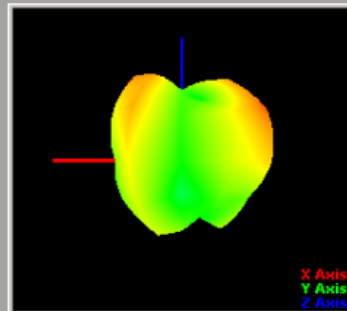
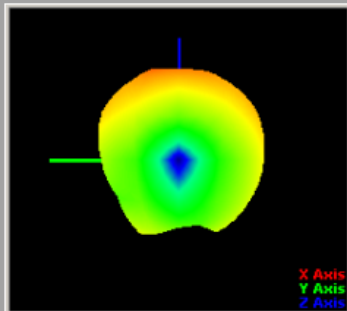
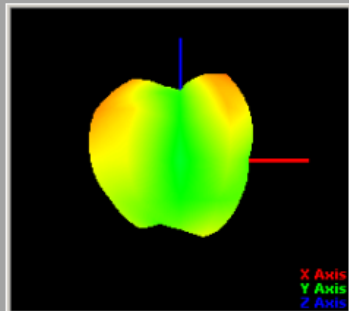
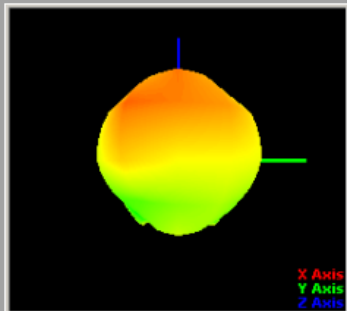
T45-P225



0.5
-3.36
-7.21
-11.07
-14.92
-18.78
-22.64
-26.49
-30.35
-34.2
-38.06
-41.91
-45.77
-49.62
-53.48
-57.34
-61.19
-65.05

Coordination System Description:
Line Color XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0

T0-P0



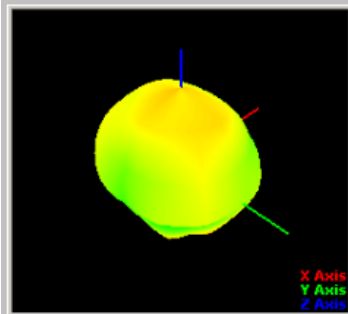
T90-P0

T90-P90

T90-P180

T90-P270

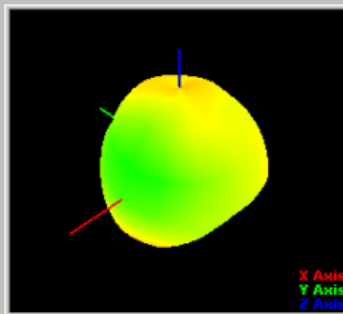
Passive parameter – apple chart–824MHz–880MHz



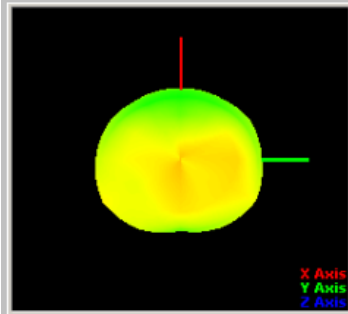
T45-P45



0.67
-2.83
-6.33
-9.83
-13.33
-16.83
-20.33
-23.82
-27.32
-30.82
-34.32
-37.82
-41.32
-44.82
-48.32
-51.82
-55.32
-58.82



T45-P225

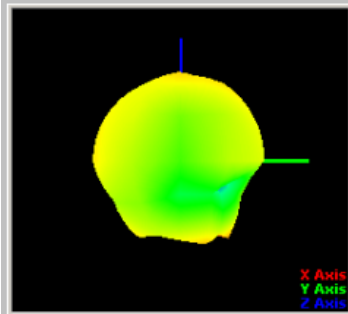


T0-P0

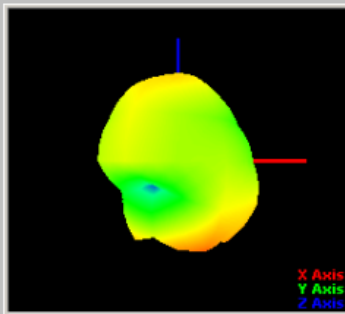


0.67
-2.83
-6.33
-9.83
-13.33
-16.83
-20.33
-23.82
-27.32
-30.82
-34.32
-37.82
-41.32
-44.82
-48.32
-51.82
-55.32
-58.82

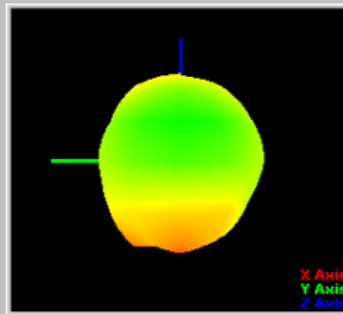
Coordination System Description:
Line Colr XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



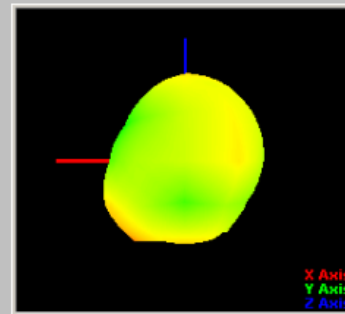
T90-P0



T90-P90

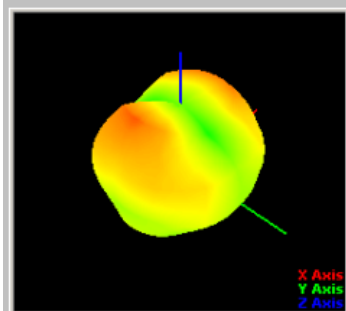


T90-P180



T90-P270

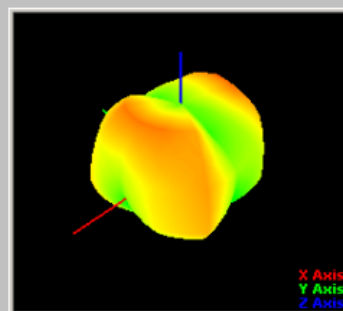
Passive parameter – apple chart–880MHz–960MHz



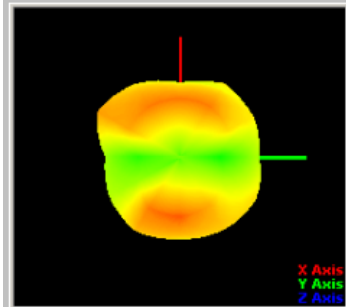
T45-P45



0.64
-3.03
-6.7
-10.38
-14.05
-17.72
-21.4
-25.07
-28.74
-32.42
-36.09
-39.77
-43.44
-47.11
-50.79
-54.46
-58.13
-61.81



T45-P225

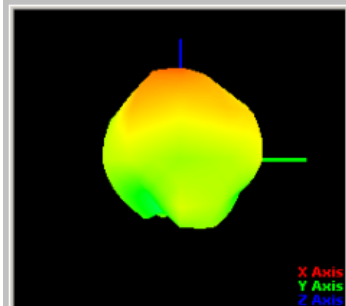


T0-P0

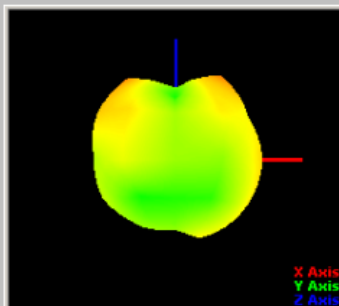


0.64
-3.03
-6.7
-10.38
-14.05
-17.72
-21.4
-25.07
-28.74
-32.42
-36.09
-39.77
-43.44
-47.11
-50.79
-54.46
-58.13
-61.81

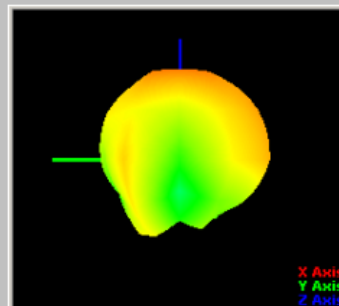
Coordination System Description:
Line Color XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



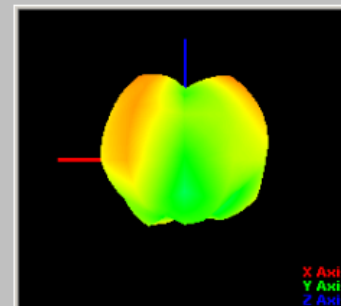
T90-P0



T90-P90

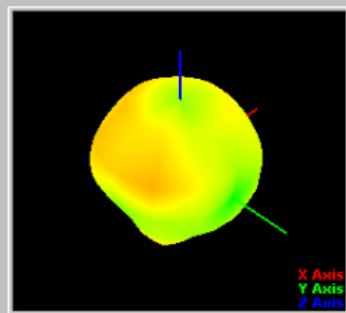


T90-P180



T90-P270

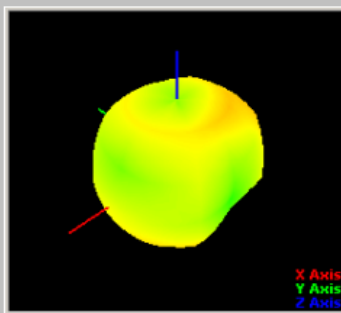
Passive parameter – apple chart–1710MHz–1880MHz



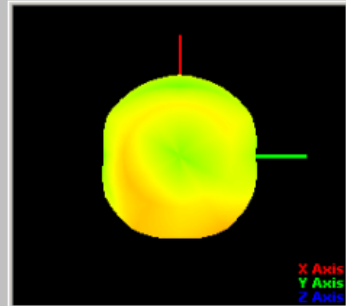
T45-P45



1.07
-3.01
-7.1
-11.18
-15.26
-19.35
-23.43
-27.52
-31.6
-35.69
-39.77
-43.85
-47.94
-52.02
-56.11
-60.19
-64.27
-68.36



T45-P225

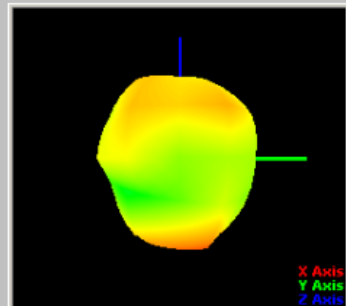


T0-P0

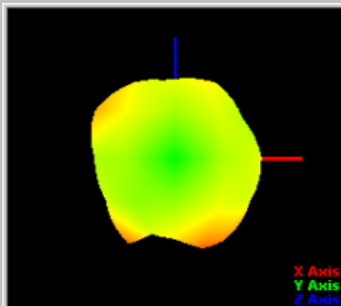


1.07
-3.01
-7.1
-11.18
-15.26
-19.35
-23.43
-27.52
-31.6
-35.69
-39.77
-43.85
-47.94
-52.02
-56.11
-60.19
-64.27
-68.36

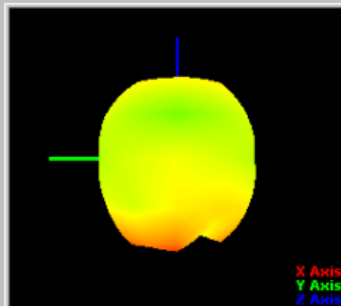
Coordination System Description:
Line Colr XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



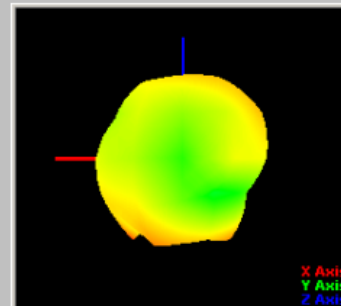
T90-P0



T90-P90

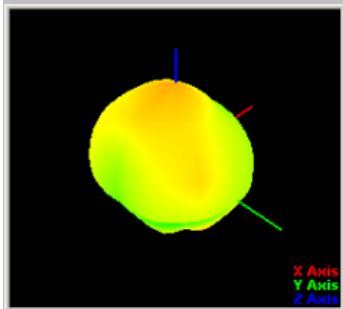


T90-P180



T90-P270

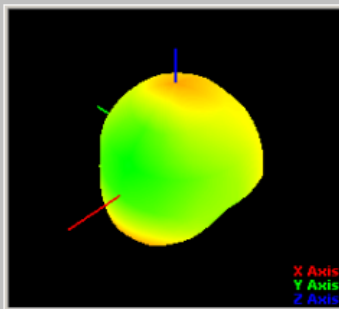
Passive parameter – apple chart–1880MHz–1990MHz



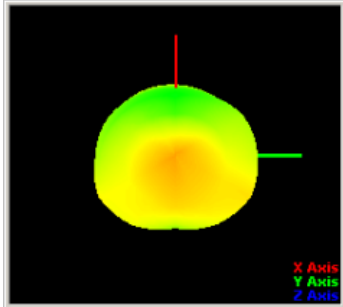
T45-P45



1.17
-2.55
-6.27
-9.99
-13.72
-17.44
-21.16
-24.88
-28.6
-32.32
-36.04
-39.77
-43.49
-47.21
-50.93
-54.65
-58.37
-62.09



T45-P225

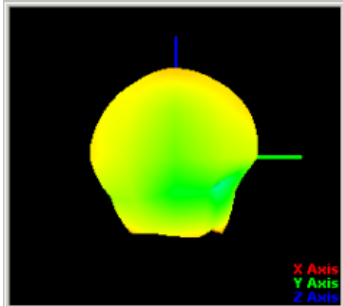


T0-P0

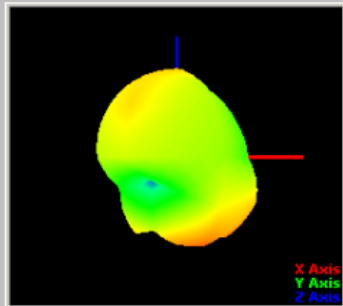


1.17
-2.55
-6.27
-9.99
-13.72
-17.44
-21.16
-24.88
-28.6
-32.32
-36.04
-39.77
-43.49
-47.21
-50.93
-54.65
-58.37
-62.09

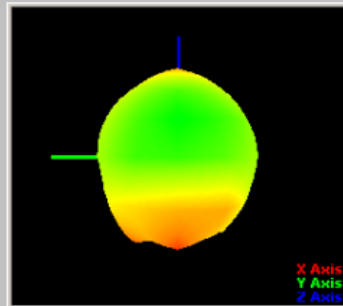
Coordination System Description:
Line Color XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



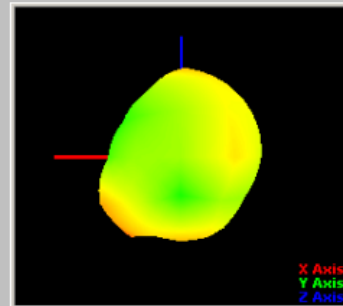
T90-P0



T90-P90

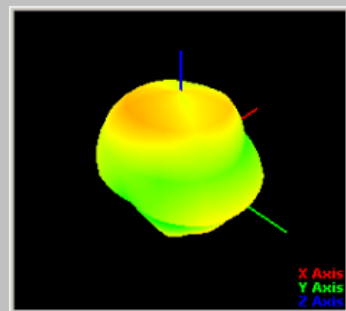


T90-P180



T90-P270

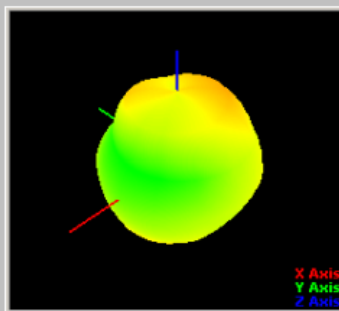
Passive parameter – apple chart–1990MHz–2170MHz



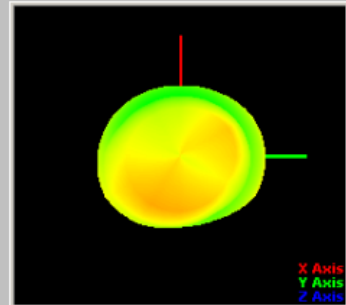
T45-P45



1.2
-2.35
-5.9
-9.45
-13
-16.55
-20.1
-23.65
-27.2
-30.75
-34.3
-37.85
-41.4
-44.95
-48.5
-52.05
-55.6
-59.16



T45-P225

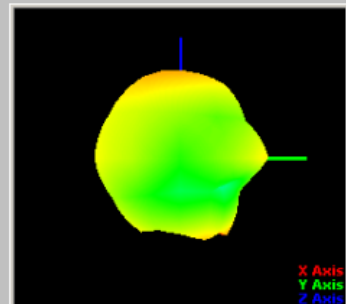


T0-P0

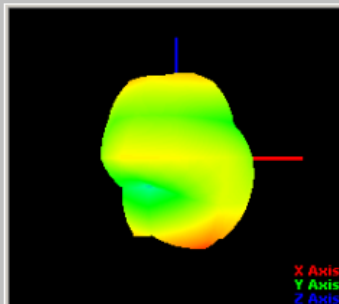


1.2
-2.35
-5.9
-9.45
-13
-16.55
-20.1
-23.65
-27.2
-30.75
-34.3
-37.85
-41.4
-44.95
-48.5
-52.05
-55.6
-59.16

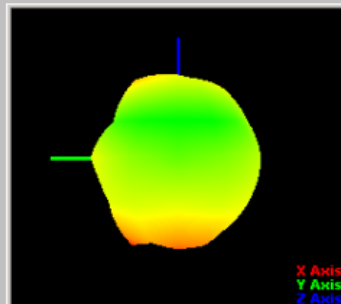
Coordination System Description:
Line Colr XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



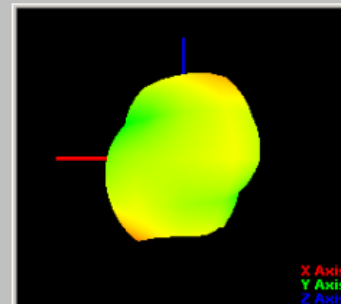
T90-P0



T90-P90

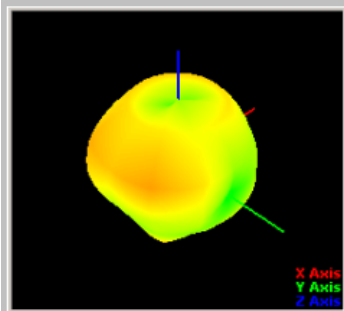


T90-P180



T90-P270

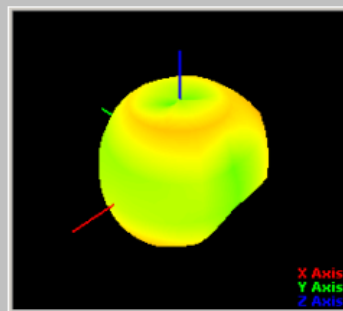
Passive parameter – apple chart–2300MHz–2400MHz



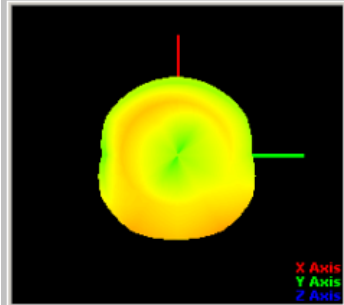
T45-P45



1.31
-2.69
-6.7
-10.71
-14.71
-18.72
-22.73
-26.73
-30.74
-34.74
-38.75
-42.76
-46.76
-50.77
-54.78
-58.78
-62.79
-66.8



T45-P225

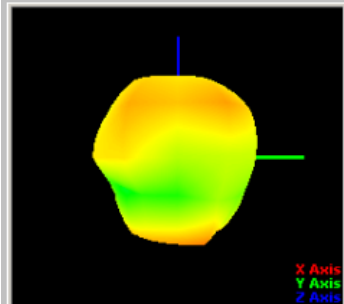


T0-P0

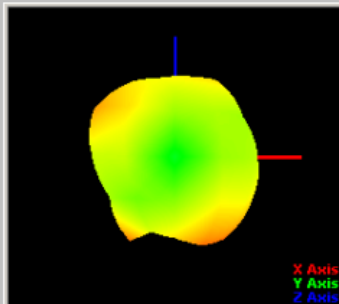


1.31
-2.69
-6.7
-10.71
-14.71
-18.72
-22.73
-26.73
-30.74
-34.74
-38.75
-42.76
-46.76
-50.77
-54.78
-58.78
-62.79
-66.8

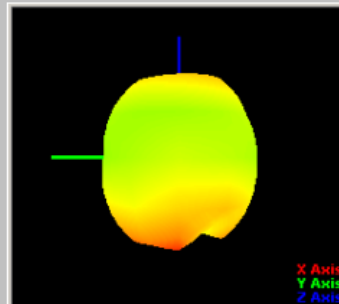
Coordination System Description:
Line Color XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



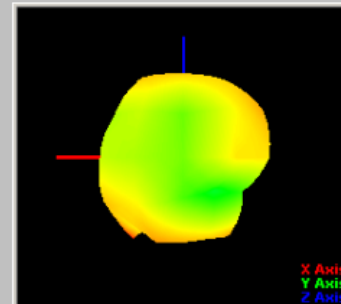
T90-P0



T90-P90

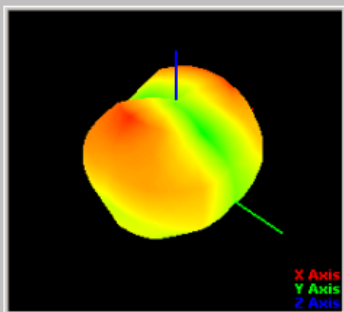


T90-P180



T90-P270

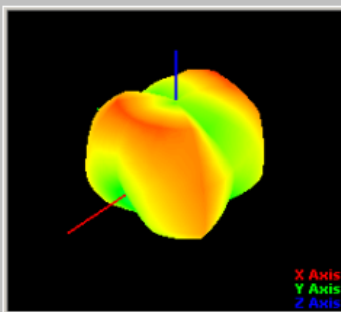
Passive parameter – apple chart–2400MHz–2500MHz



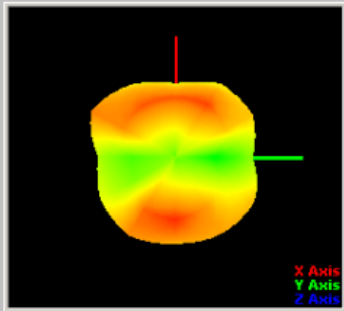
T45-P45



1.31
-2.34
-5.98
-9.63
-13.28
-16.92
-20.57
-24.22
-27.86
-31.51
-35.15
-38.8
-42.45
-46.09
-49.74
-53.39
-57.03
-60.68



T45-P225

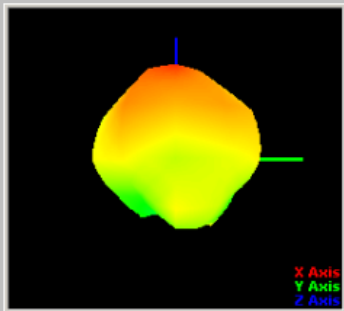


T0-P0

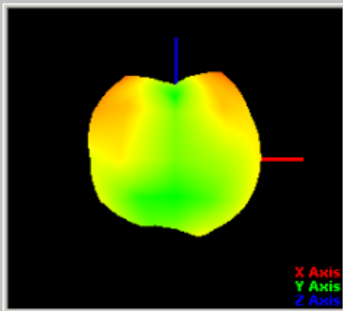


1.31
-2.34
-5.98
-9.63
-13.28
-16.92
-20.57
-24.22
-27.86
-31.51
-35.15
-38.8
-42.45
-46.09
-49.74
-53.39
-57.03
-60.68

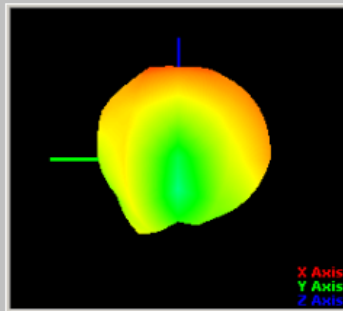
Coordination System Description:
Line Color XYZ Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



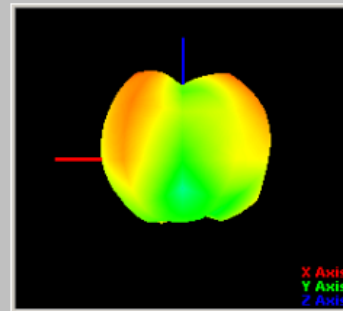
T90-P0



T90-P90

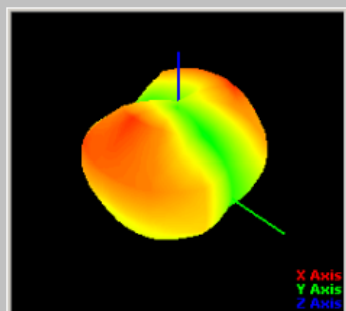


T90-P180



T90-P270

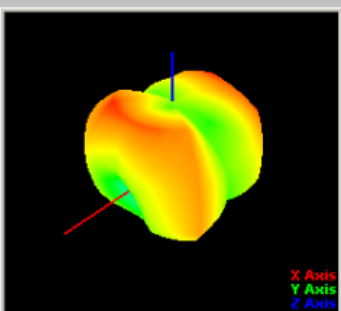
Passive parameter – apple chart–2500MHz–2700MHz



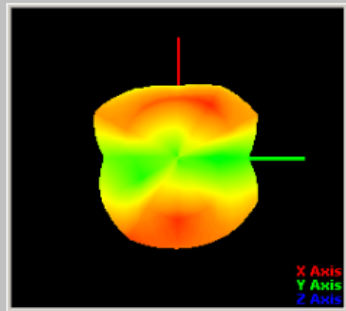
T45-P45



1.36
-3
-7.35
-11.71
-16.07
-20.43
-24.78
-29.14
-33.5
-37.86
-42.21
-46.57
-50.93
-55.29
-59.64
-64
-68.36
-72.72



T45-P225

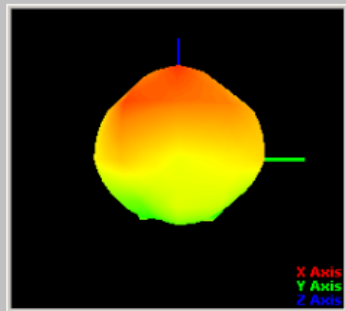


T0-P0

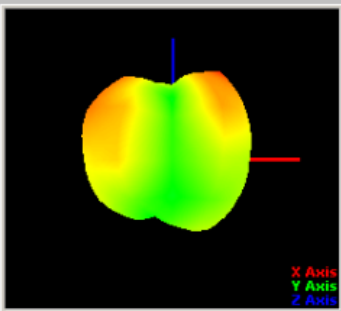


1.36
-3
-7.35
-11.71
-16.07
-20.43
-24.78
-29.14
-33.5
-37.86
-42.21
-46.57
-50.93
-55.29
-59.64
-64
-68.36
-72.72

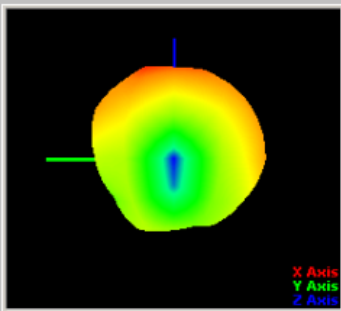
Coordination System Description:
Line Colr XY Z Theta-Phi
Red L. Axis X Theta90-Phi0
Green L. Axis Y Theta90-Phi90
Blue L. Axis Z Theta0



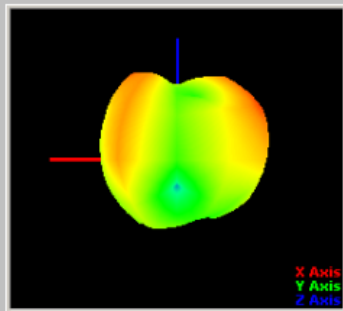
T90-P0



T90-P90



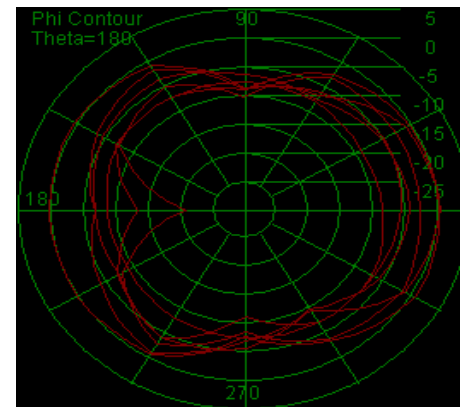
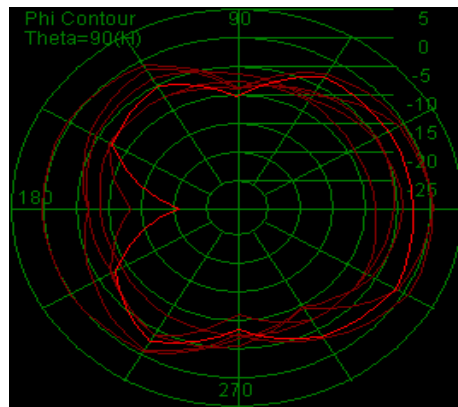
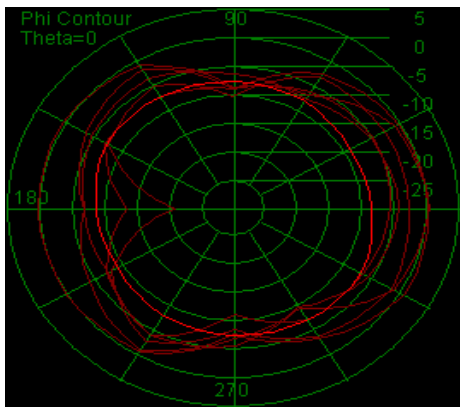
T90-P180



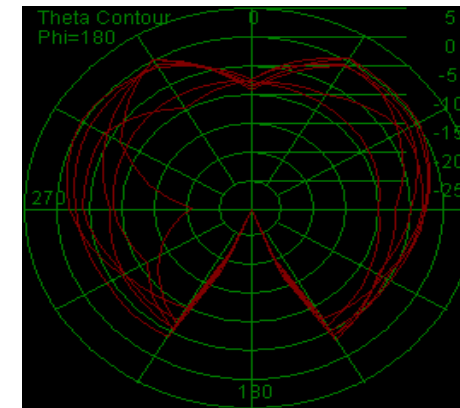
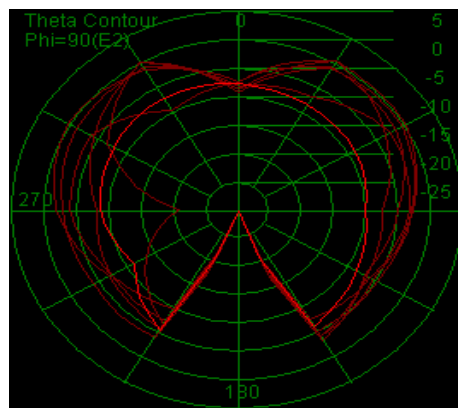
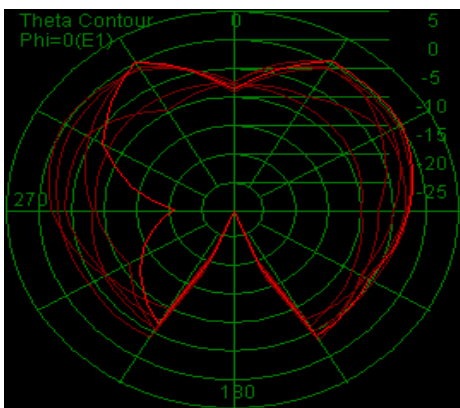
T90-P270

Passive parameters – plan view–700MHz–824MHz

Horizontal:

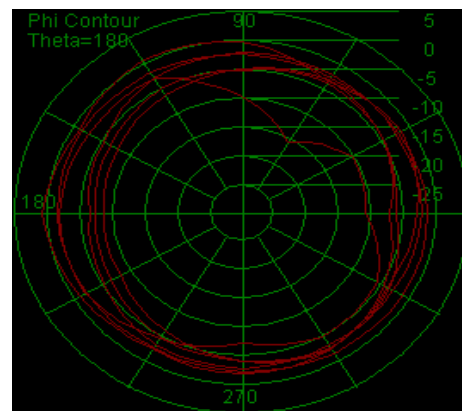
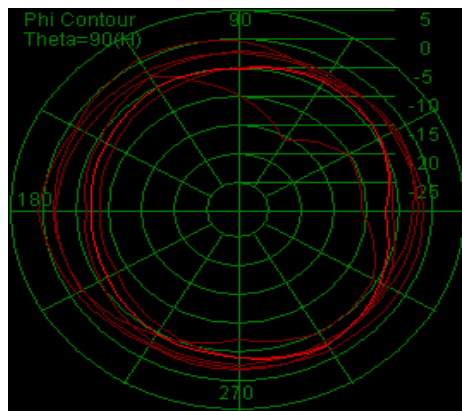
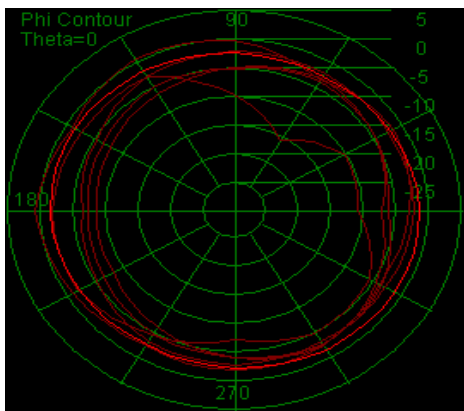


Vertical:

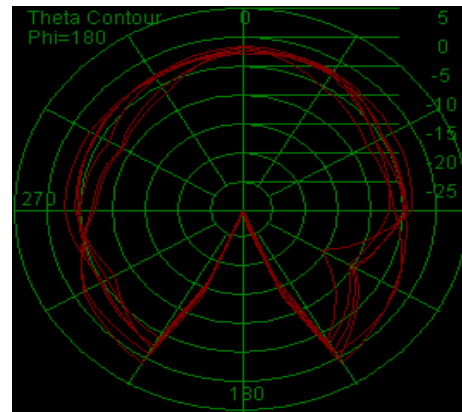
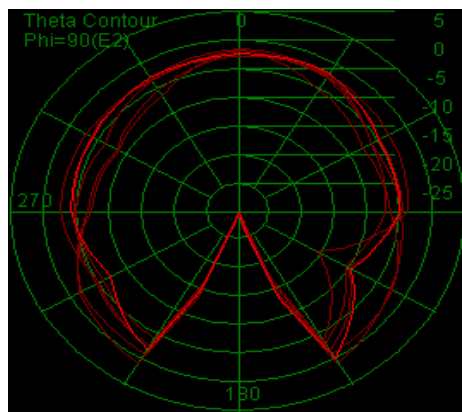
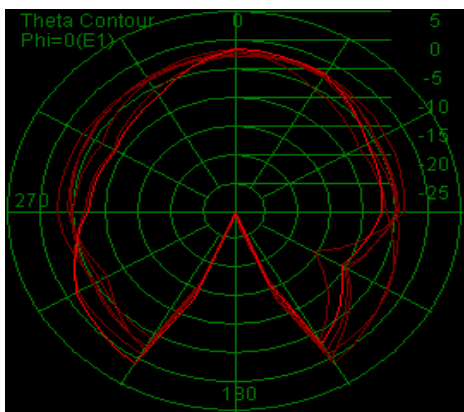


Passive parameters – plan view–824MHz–880MHz

Horizontal:

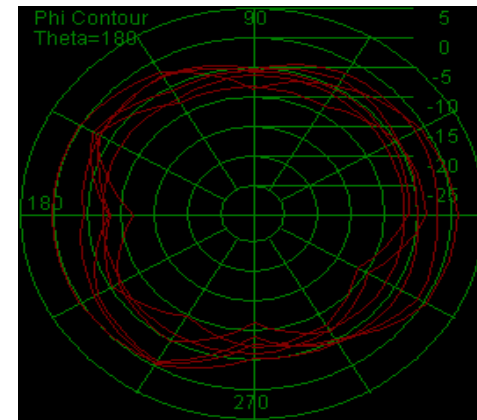
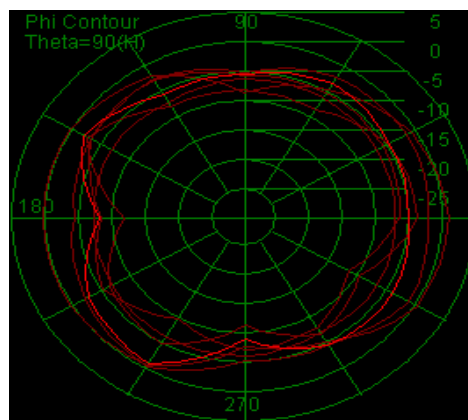
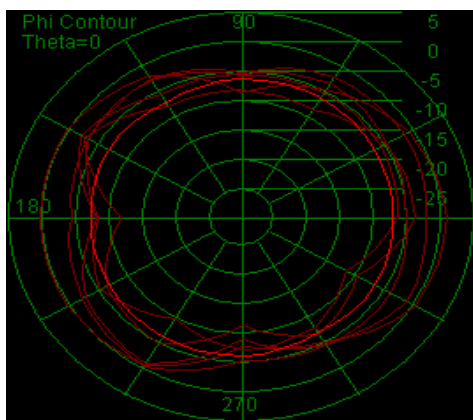


Vertical:

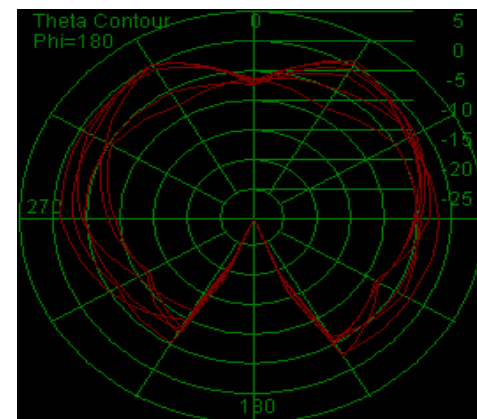
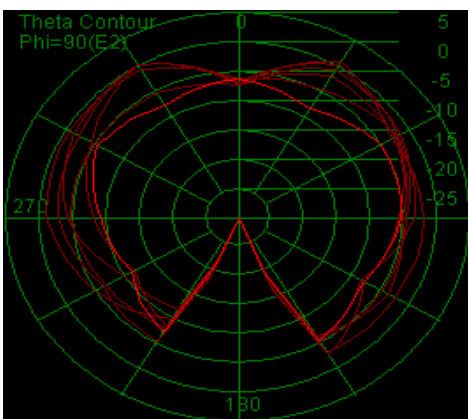
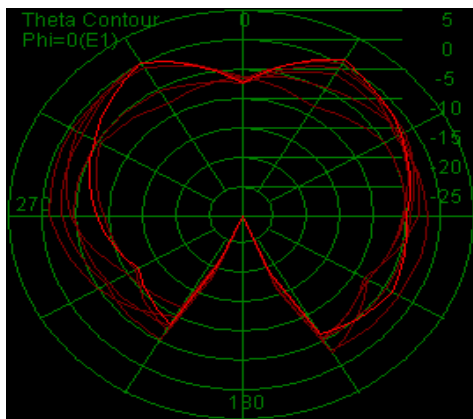


Passive parameters – plan view–880MHz–960MHz

Horizontal:

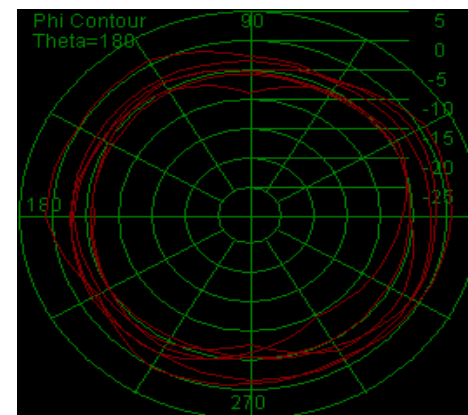
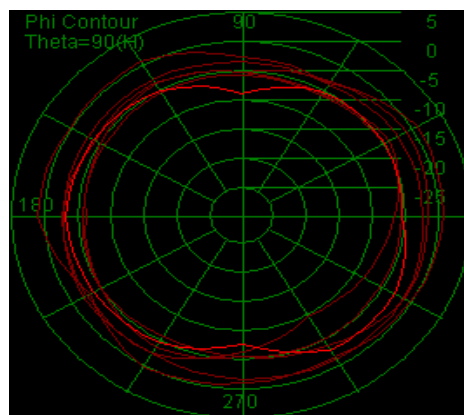
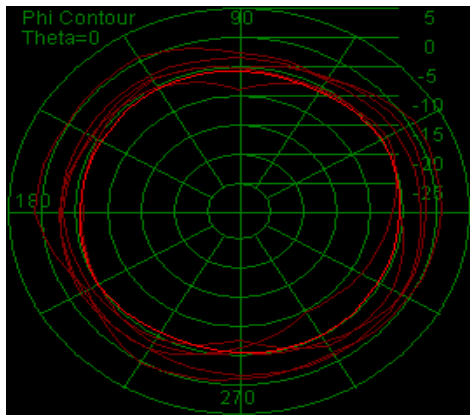


Vertical:

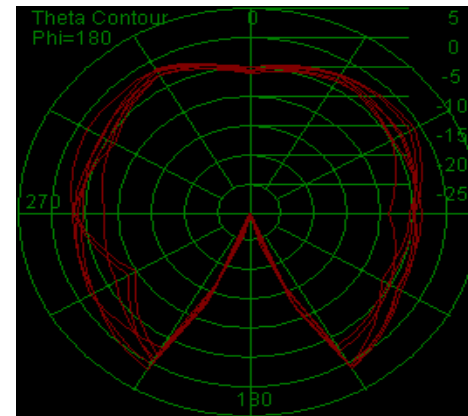
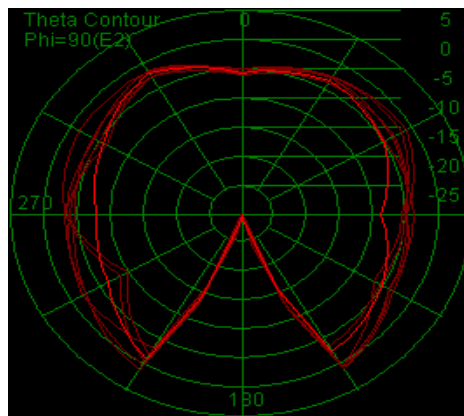
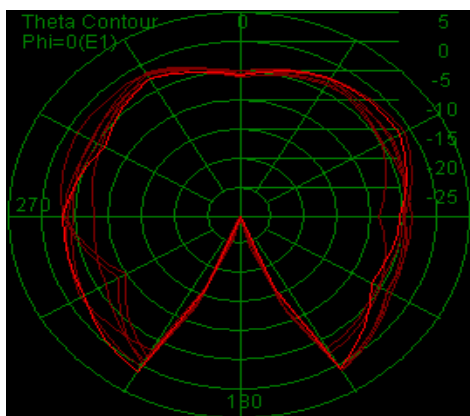


Passive parameters – plan view–1710MHz–1880MHz

Horizontal:

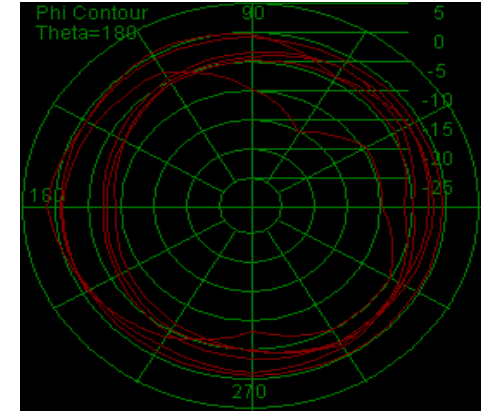
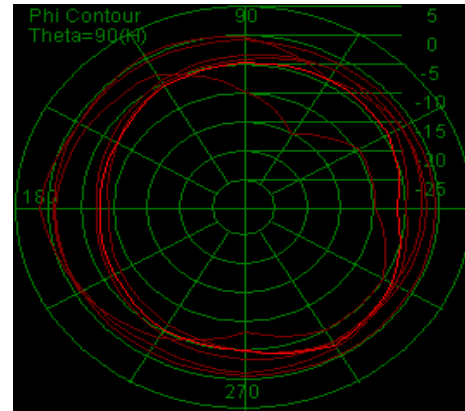
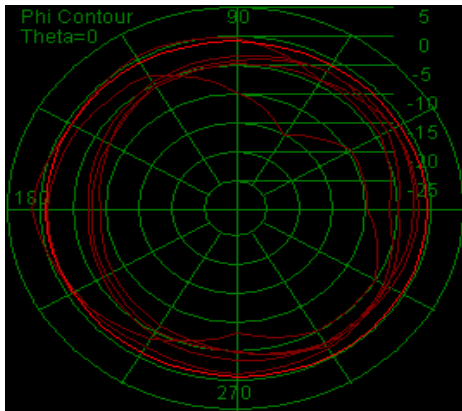


Vertical:

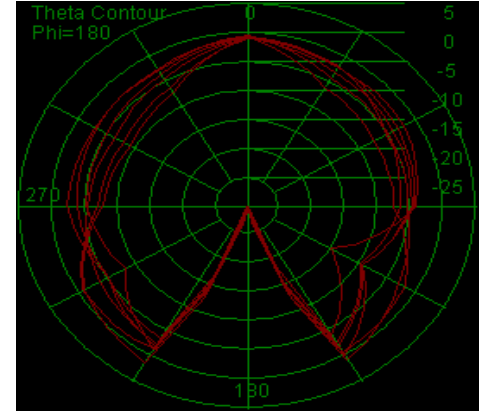
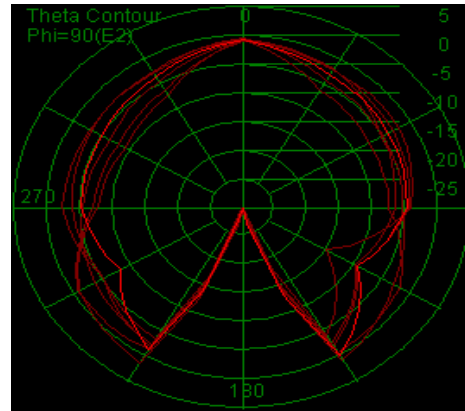
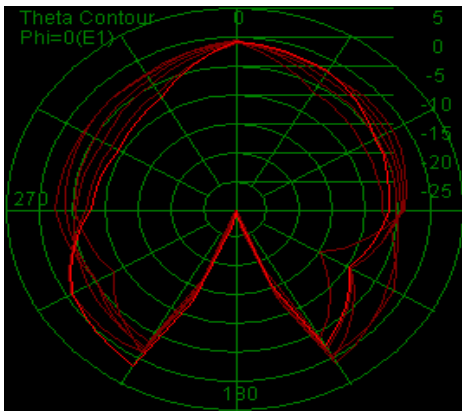


Passive parameters – plan view–1880MHz–1990MHz

Horizontal:

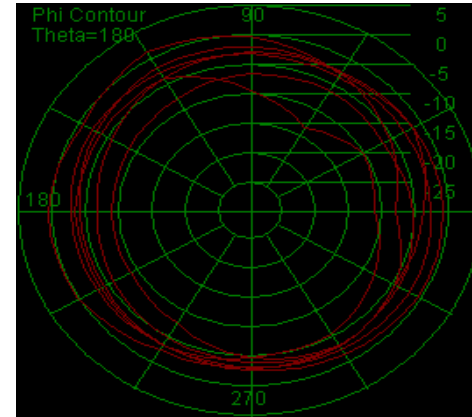
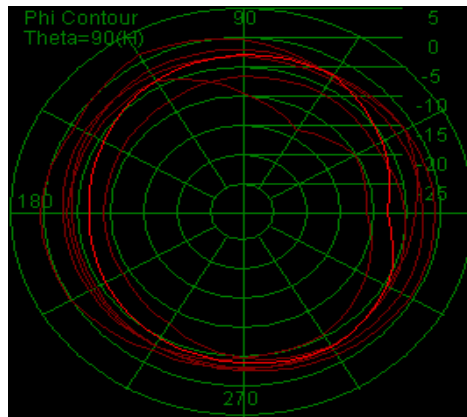
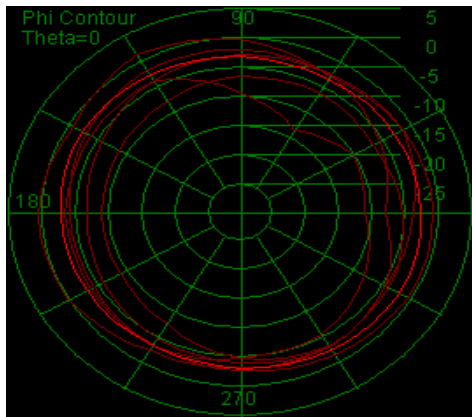


Vertical:

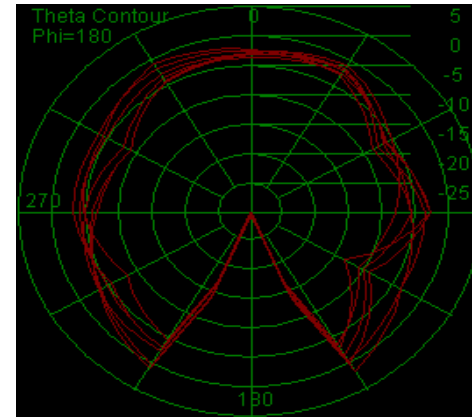
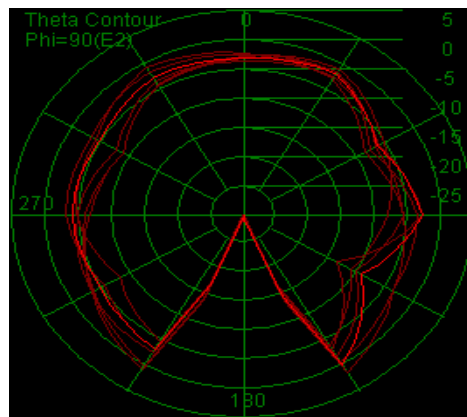
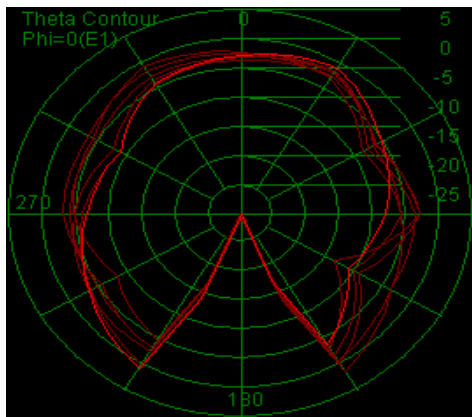


Passive parameters – plan view–1990MHz–2170MHz

Horizontal:

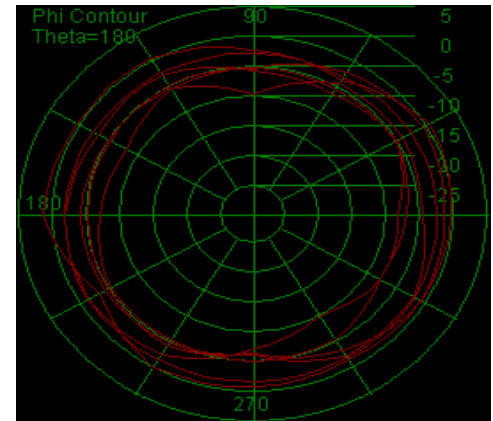
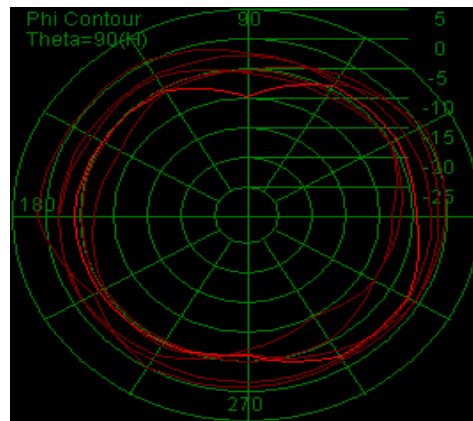
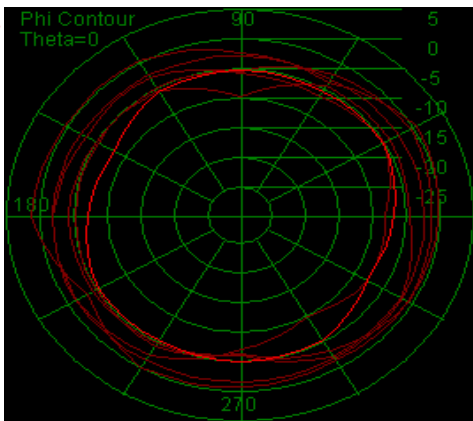


Vertical:

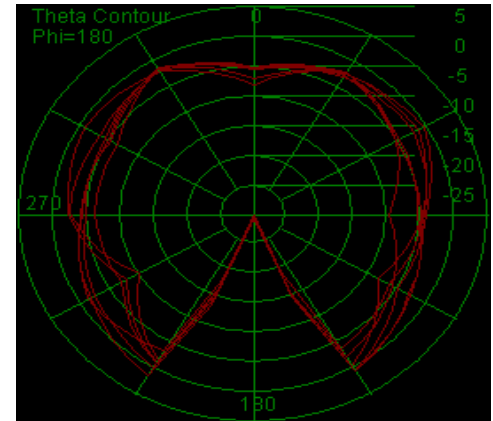
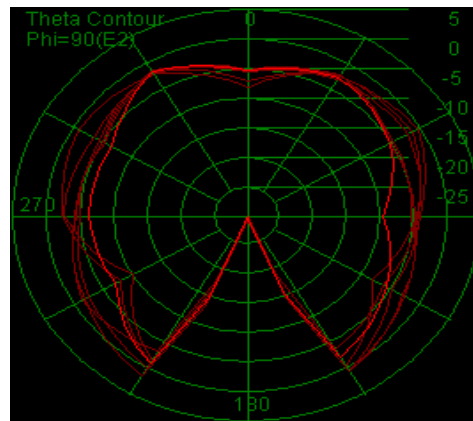
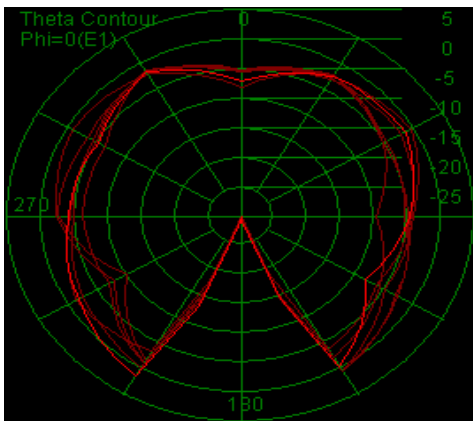


Passive parameters – plan view–2300MHz–2400MHz

Horizontal:

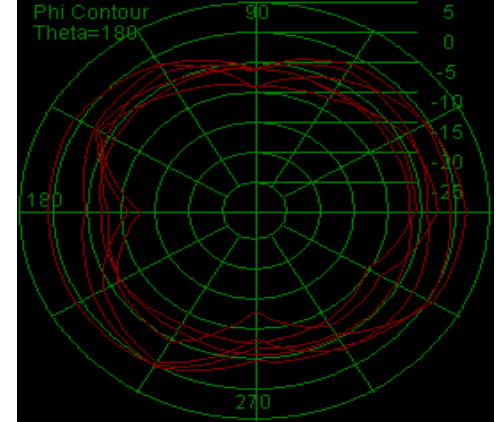
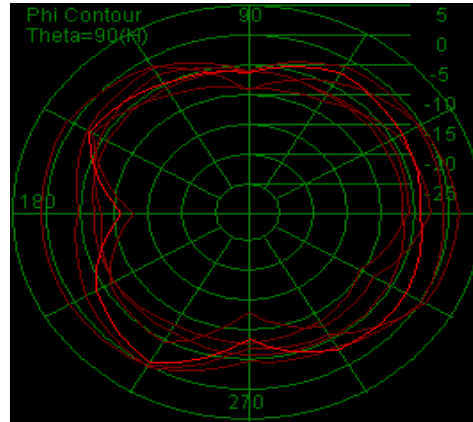
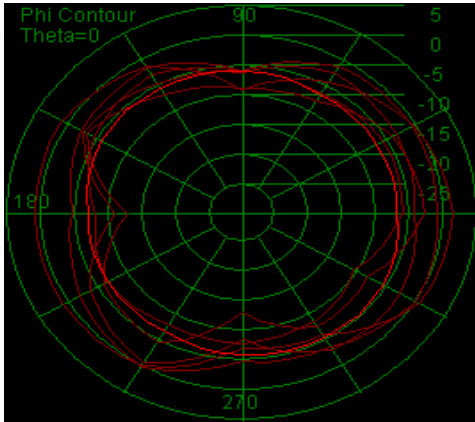


Vertical:

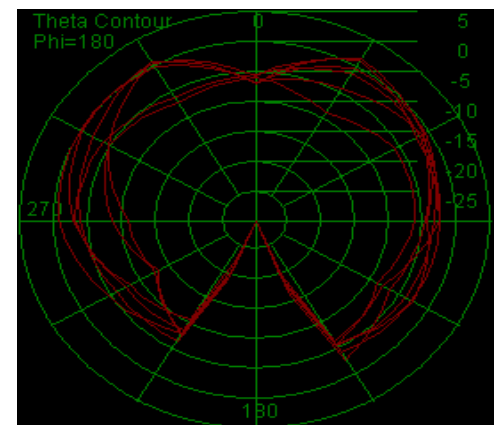
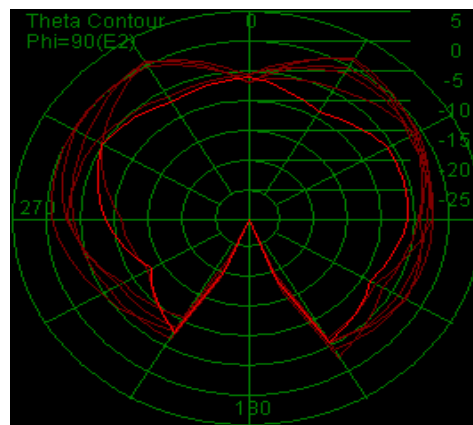
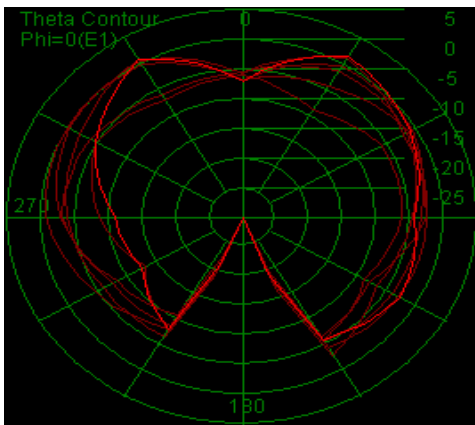


Passive parameters – plan view–2400MHz–2500MHz

Horizontal:

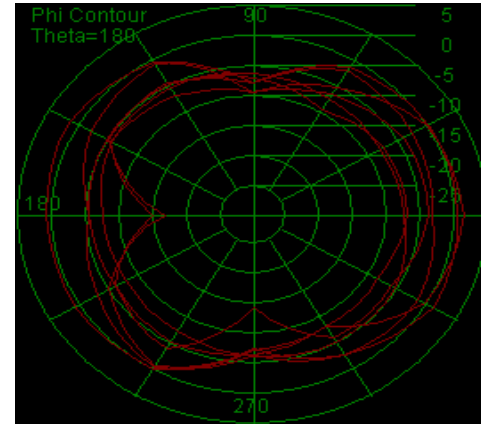
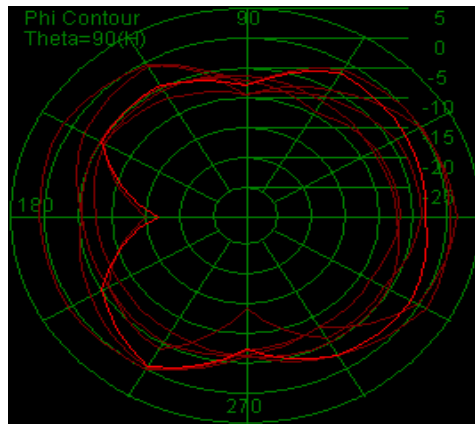
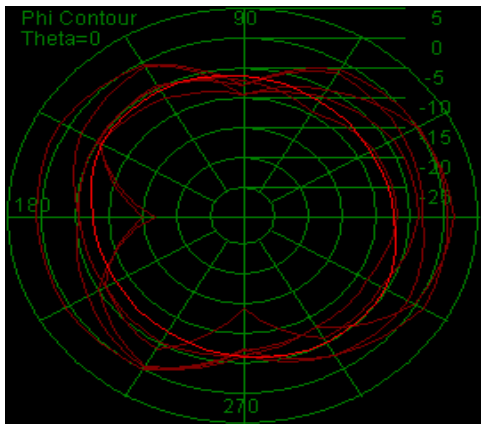


Vertical:

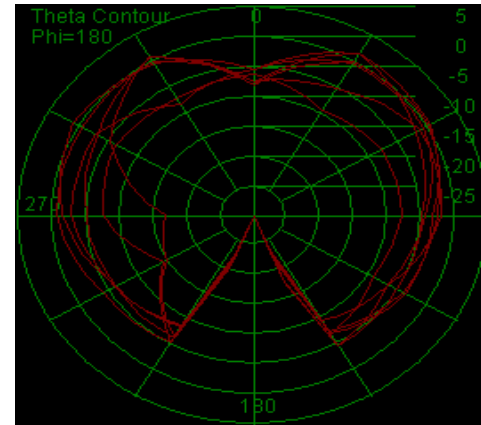
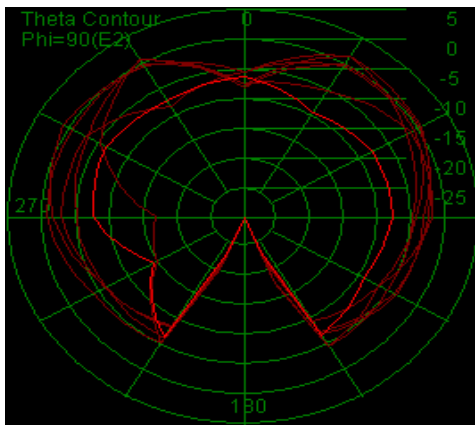
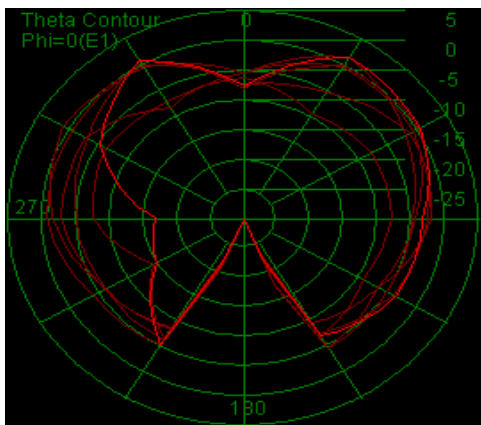


Passive parameters – plan view–2500MHz–2700MHz

Horizontal:



Vertical:



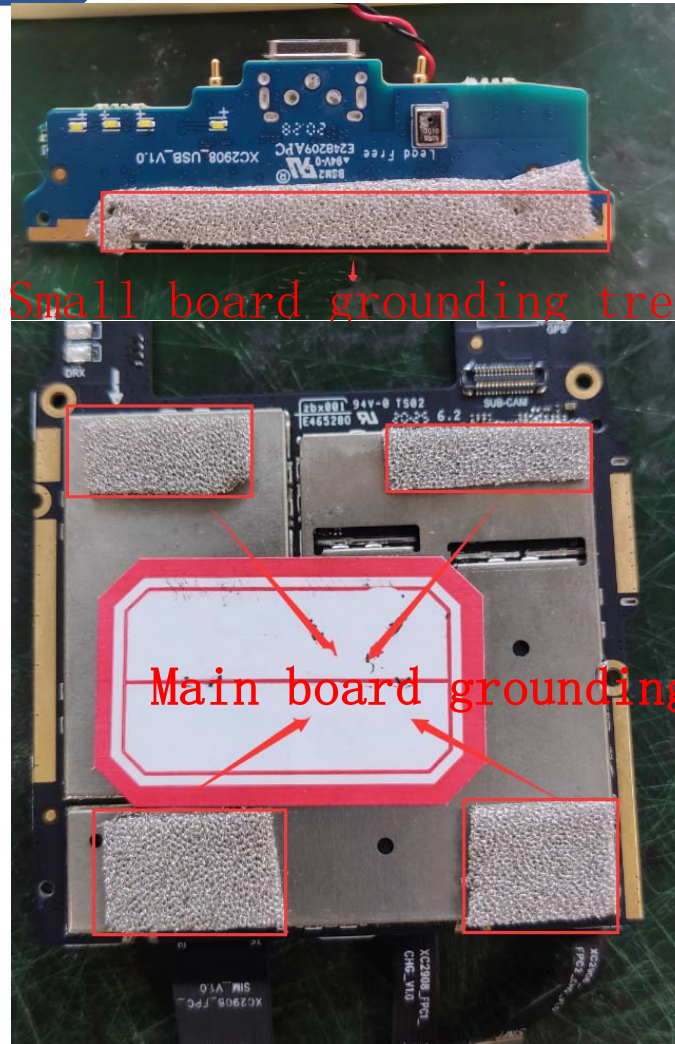
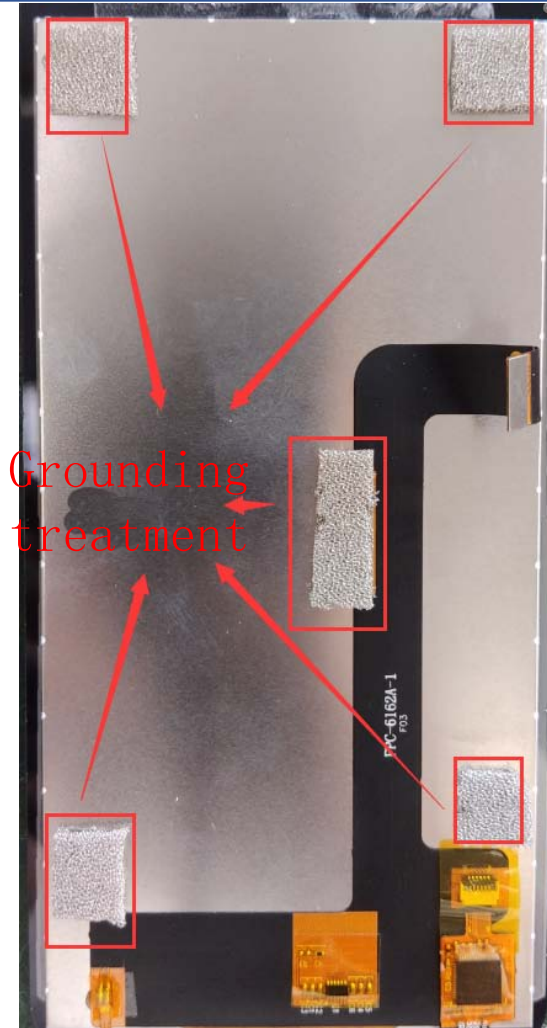
GPS Test Star Map

1. Test in the open area below our building and on the lawn

Barcode: 290600002282000003
Time: 10:32
YGPS

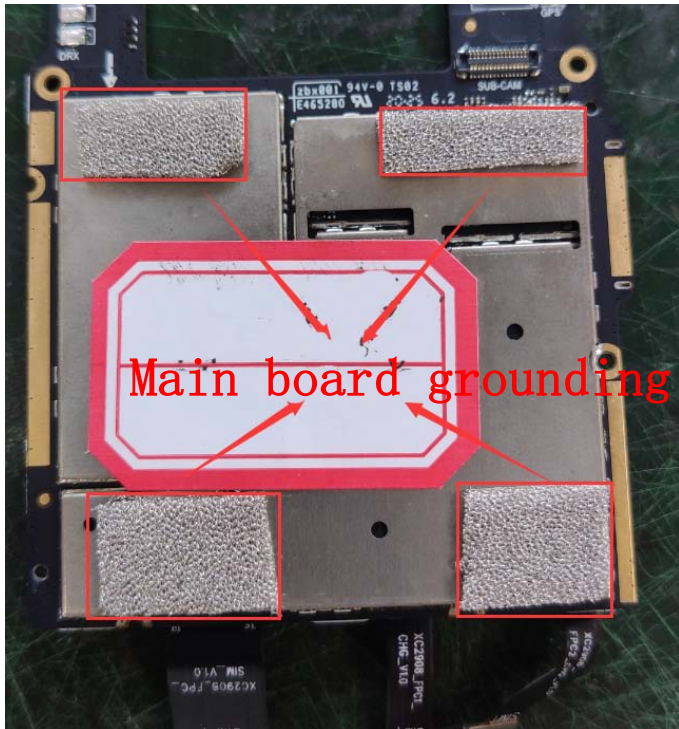
SATEL LITES CNR	SATEL LITES LOC	INFORM ATION	NMEA LOC	GPS TEST
G GPS R GLN B BD E GAL Q QZS L L L S I IRNSS S SBAS				
Average CNR <input type="checkbox"/> Show in single page				
ELEVATION: 0.00m 0.00m 0.00m 0.00m				
AZIMUTH: 0.00 0.00 0.00 0.00				
SVID	Fq	CNR	Elevation	Azimuth
2 L1	33.3	0.00	0.00	
4 L1	18.7	2.00	41.00	
6 L1	36.3	44.00	30.00	
9 L1	40.2	26.00	66.00	
11 L1	22.0	44.00	326.00	
12 L1	40.3	33.00	295.00	
14 L1	22.7	4.00	164.00	
17 L1	44.1	38.00	118.00	
19 L1	39.0	60.00	94.00	
20 L1	20.2	61.00	262.00	
58 L1	36.7	14.00	31.00	
59 L1	36.0	59.00	62.00	
70 L1	0.0	42.00	162.00	
73 L1	0.0	6.00	202.00	

Antenna environment treatment

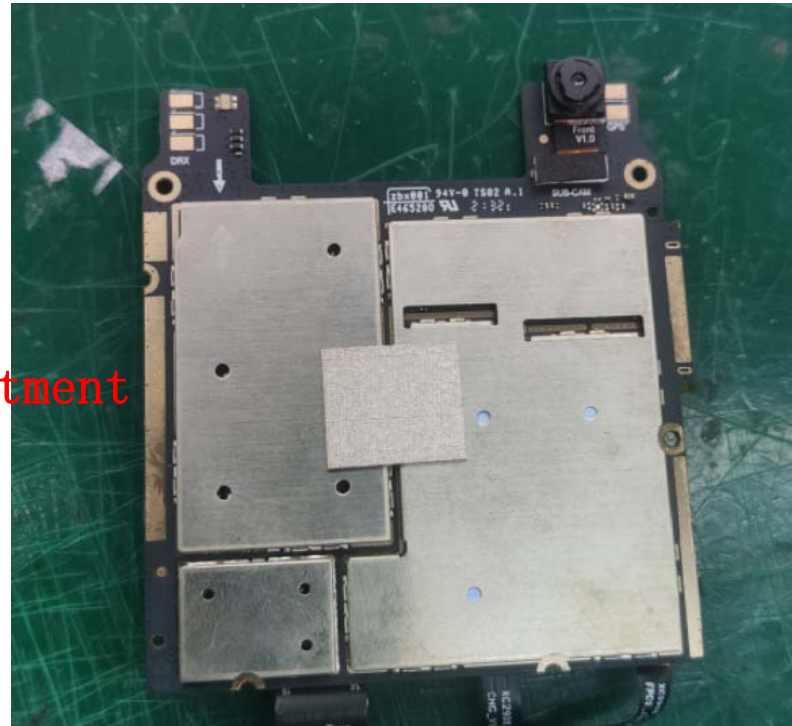


Antenna environment treatment

Original grounding treatment:

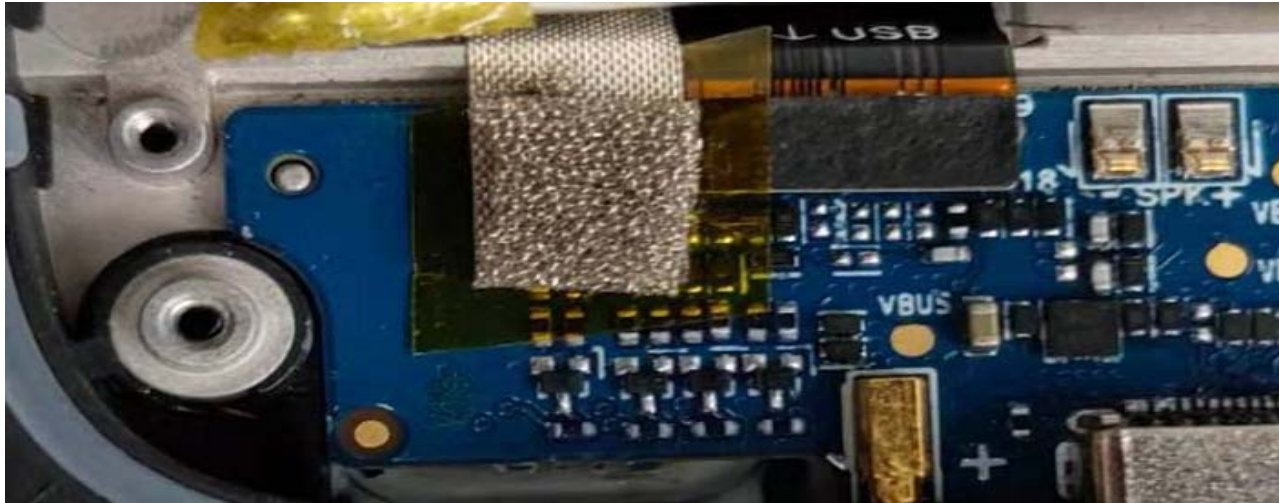


Grounding treatment of mass production machine:

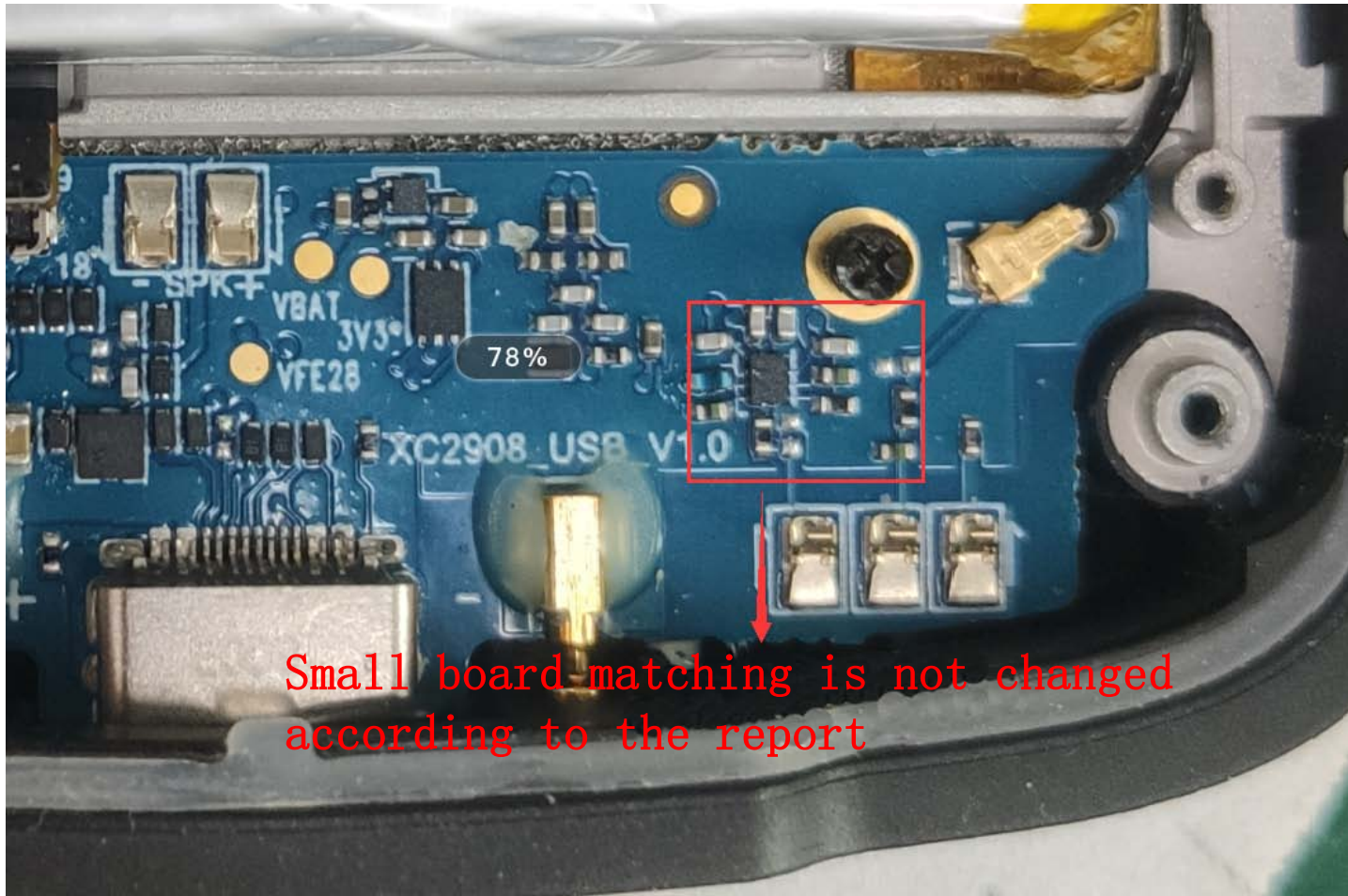


Attention shall be paid to the environmental treatment in the report. Less grounding will affect the sensitivity. Please note that

Grounding treatment of horn



matters needing attention



Small board matching is not changed according to the report

summary

1. Grounding shall be handled in strict accordance with the environment in the report to ensure the consistency of mass production.
2. The difference between the test data of two complete machines is not large, so only one set of data is put. Please know.

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