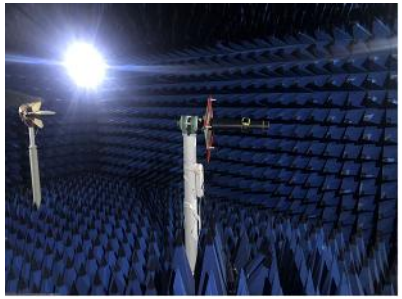
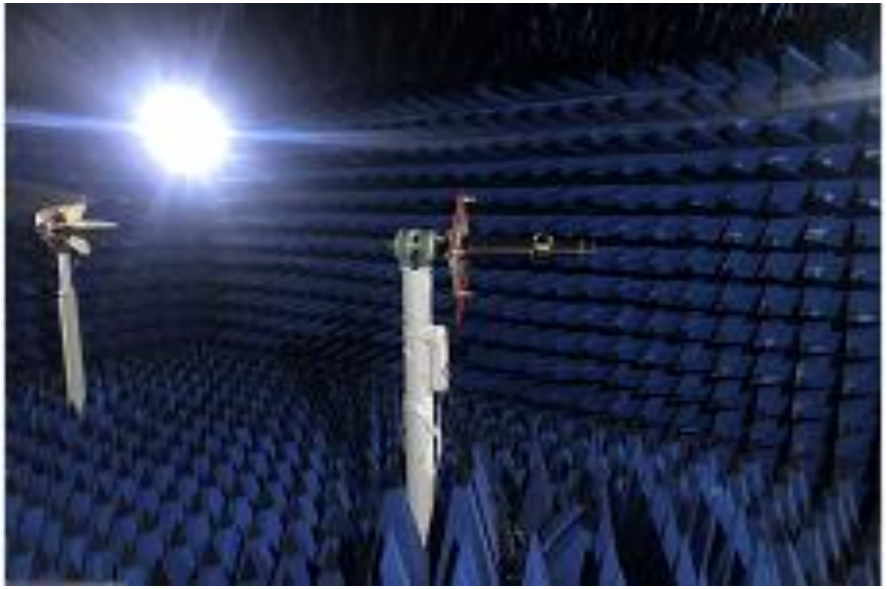
Z-TECH Z6501S Antenna Test Report

Radio frequency: He Lei
Date：2023-1-11
Contact mobile no.：15767667652



Project development environment

We are moving from the Internet age to the smart age, and the country is building a digital society and smart city. In the next 5-10 years, both the consumer electronics market and the Internet of Things market have huge development potential. The field of wireless communication is very diversified. In the future, relying on the customer platform advantages of the main antenna business and its own comprehensive strength, Yusheng will strive to provide customers with professional-level product solutions with market competitiveness.



Yusheng Communication's products cover almost all antenna applications for wireless terminal equipment, including automotive antennas, high-precision surveying and mapping antennas, drone ground and satellite data navigation, high-precision positioning antennas, medical equipment wireless transmission, consumer antennas (mobile phone antennas) , PAD, laptop antenna), base station/indoor distribution antenna, smart wearable antenna (smart watch, TWS earphone), security home antenna and a variety of wireless data transmission and wireless control smart device antennas, etc.

1 Introduction to project commissioning

2 Report Version Outline

3 Antenna Active Parameters

4 Antenna Passive Parameters

5 Antenna environment treatment and improvement

6 Summary & Additional Notes

Introduction to project commissioning

Model	Tablet			
Plate type	motherboard			
Frequency Band and Antenna Material		Bands		Materials
	main antenna	2G	GSM850/900/1800/1900	FPC
		3G	WCDMA B2/4/5	
		4G	LTE B2/4/5/7/12/13/17	
	other antenna	GWB	1575.42MHz/2.450GHz	FPC
		DRX	824MHz-2700MHz	FPC
Performance requirements	Execute according to customer requirements			

Main Antenna Active Parameters

Test	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
TRP(dBm)	26.33	26.14	26.09	24.12	24.36	24.45
TIS(dBm)			-102.13			-102.36

Test	EGSM 900			DCS 1800		
Channel	1	62	124	512	698	885
TRP(dBm)	25.26	25.43	25.11	24.23	24.35	24.48
TIS(dBm)			-100.36			-102.39

Main Antenna Active Parameters

Test	WCDMA_II			WCDMA_V		
Channel	9662	9800	9938	4357	4408	4458
TRP(dBm)	17.42	17.26	17.17	16.13	16.22	16.19
TIS(dBm)			-103.07			-102.36

Test	WCDMA_VI		
Channel	1537	1638	1738
TRP(dBm)	17.41	17.27	17.19
TIS(dBm)			-103.05

Main Antenna Active Parameters

Test	FDD B2			FDD B4		
Channel	18650	18900	19150	20050	20175	20350
TRP(dBm)	16.35	16.67	16.43	16.46	16.09	16.42
TIS(dBm)			-93.25			-93.13

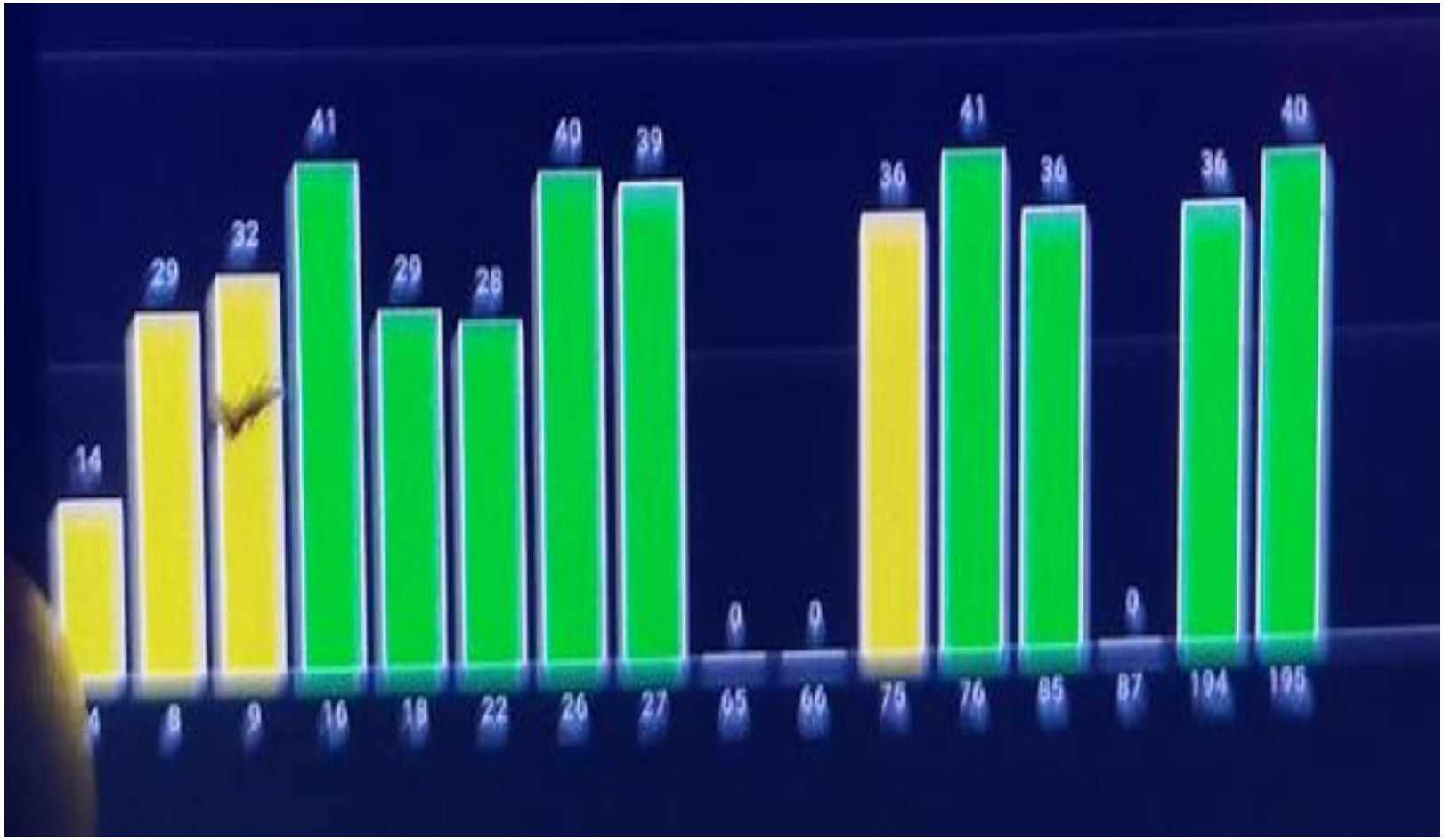
Test	FDD B5			FDD B7		
Channel	20450	20525	20600	20800	21100	21400
TRP(dBm)	16.55	16.36	16.28	16.55	16.61	16.88
TIS(dBm)			-91.43			-92.24

Test	FDD B12			FDD B13		
Channel	23035	23095	23155	23130	23230	23330
TRP(dBm)	15.35	15.69	16.14	15.46	15.77	15.89
TIS(dBm)			-90.53			-90.38

Main Antenna Active Parameters

Test	FDD B17		
Channel	23780	23790	23800
TRP(dBm)	15.76	16.17	16.33
TIS(dBm)			-90.58

GPS Test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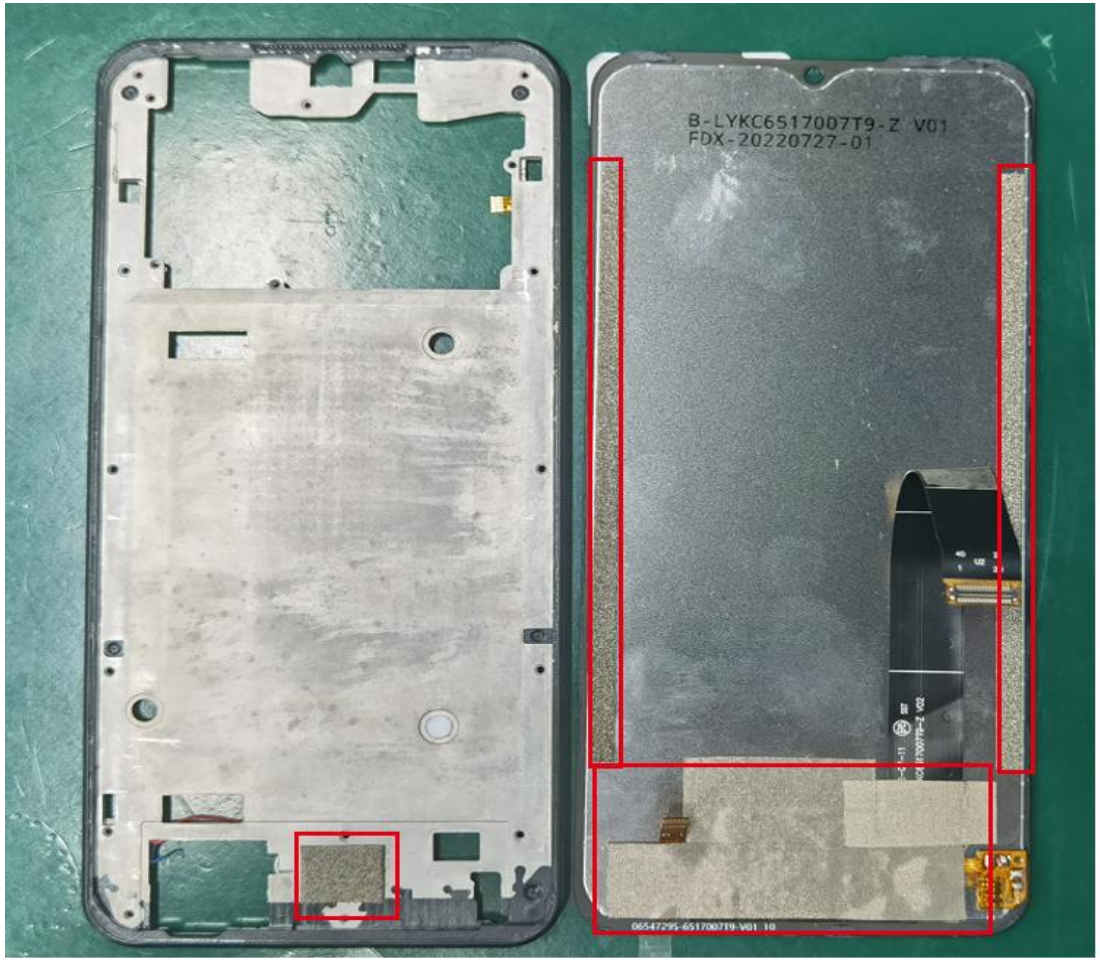
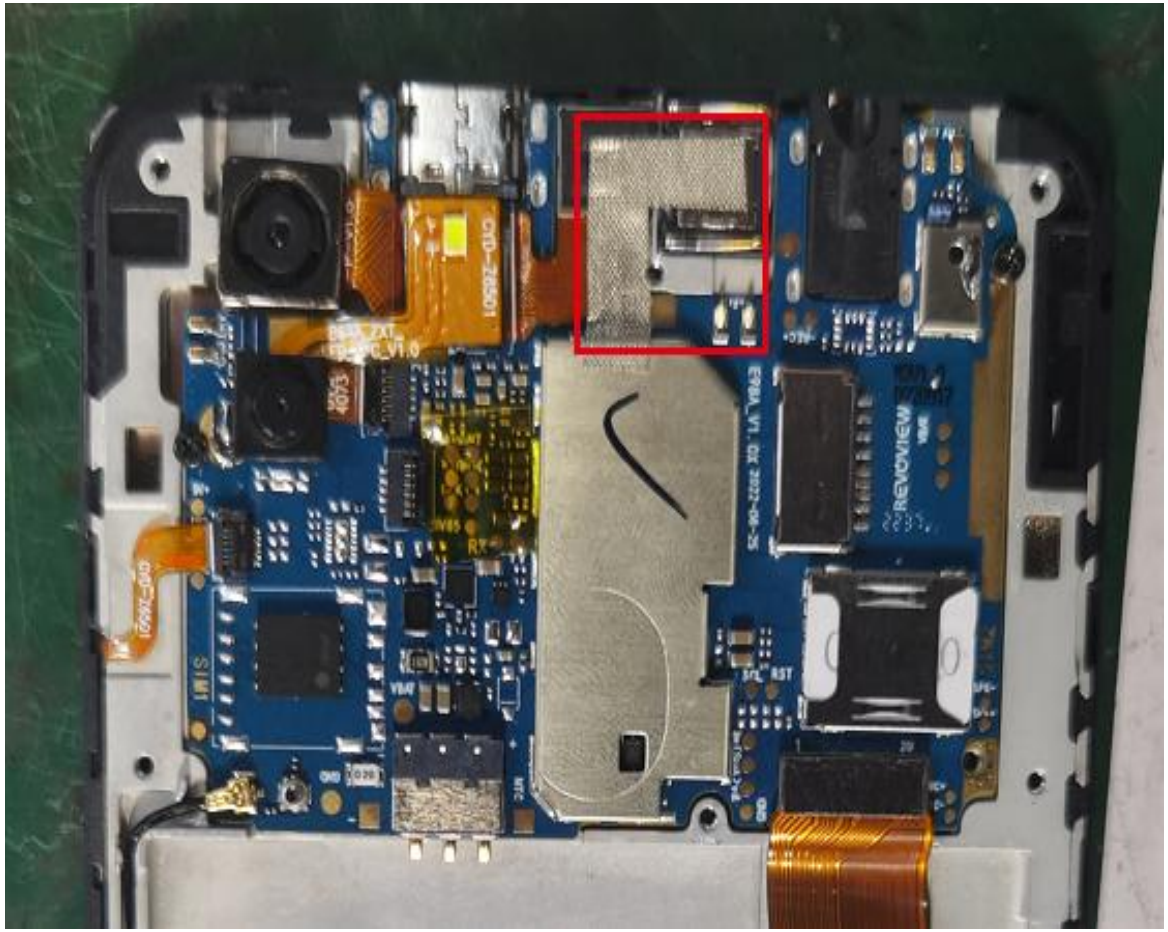
195

Antenna environment treatment and improvement



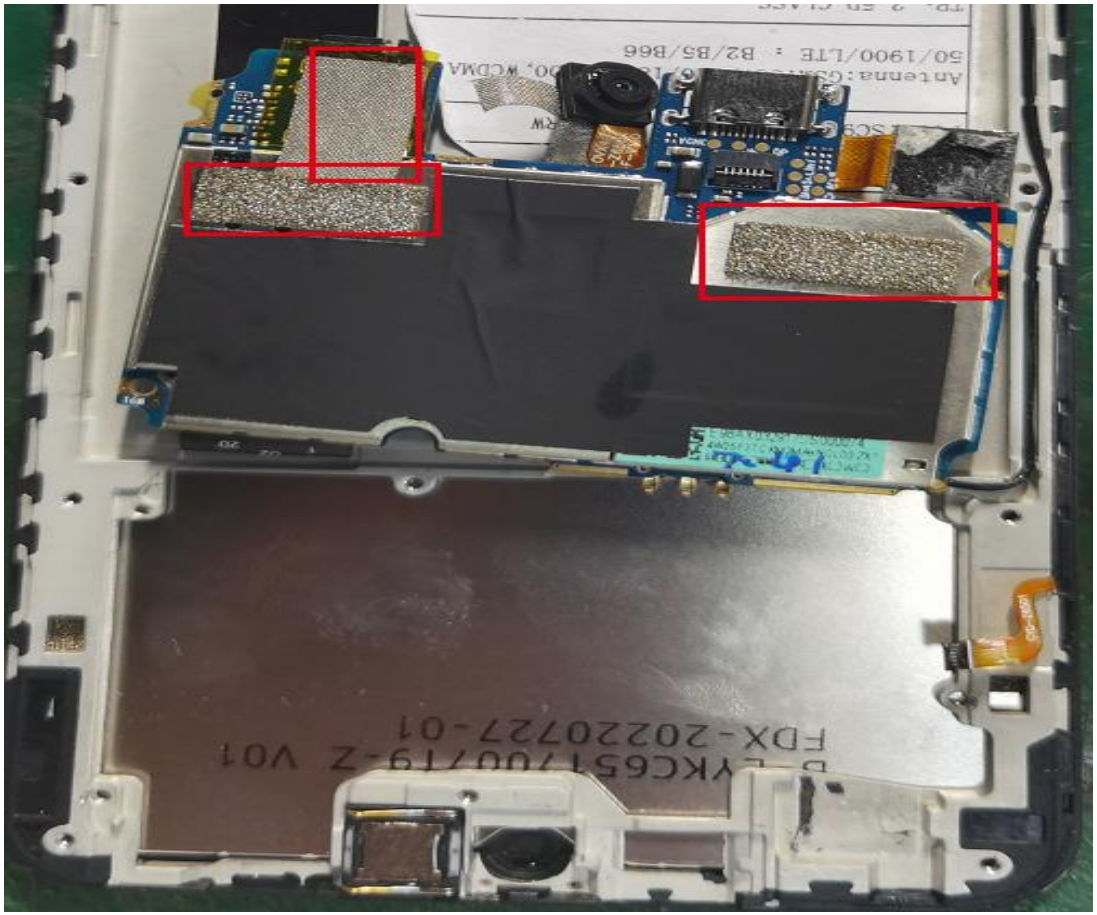
1. The middle frame and the screen are grounded.
2. The screen FPC is shielded with conductive cloth.
3. Middle frame plus sponge and grounding.

Antenna environment treatment and improvement



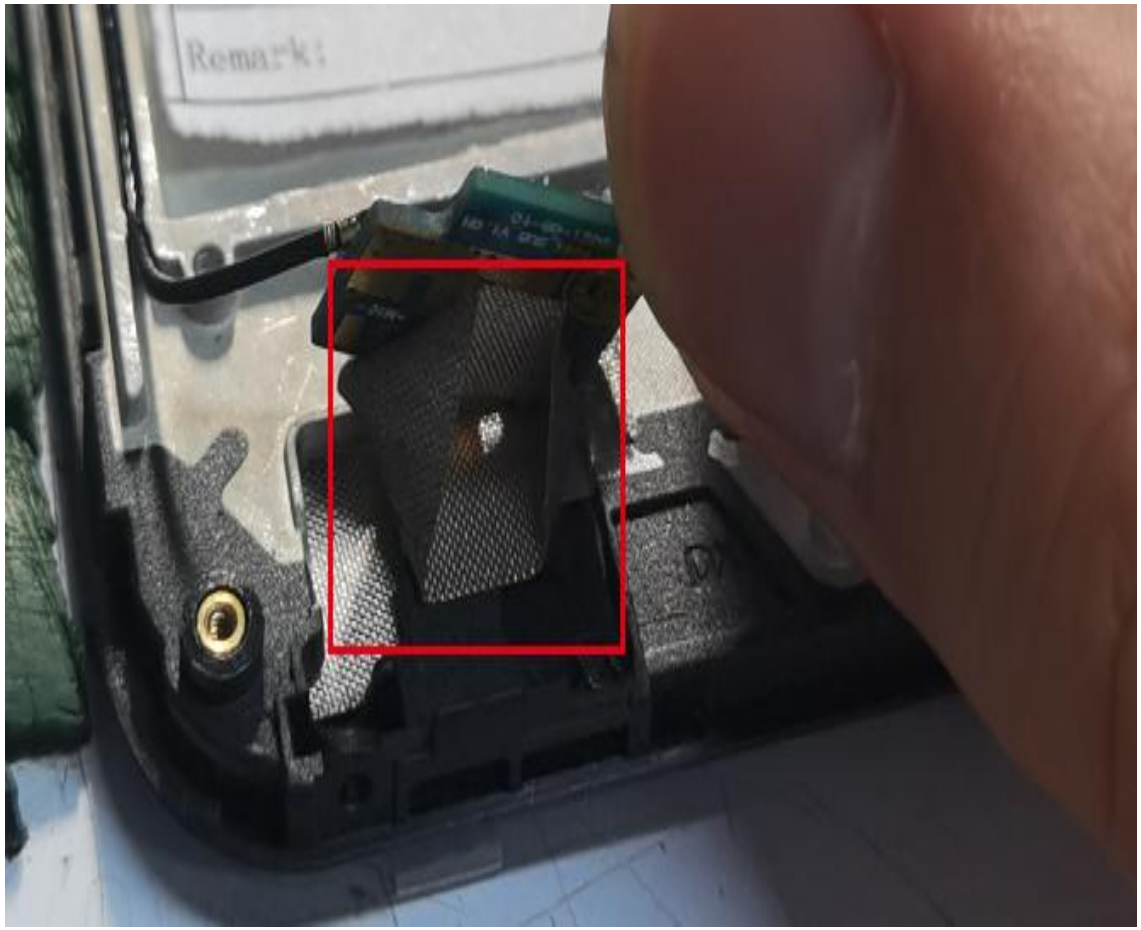
1、The earphone is grounded with a conductive cloth

Antenna environment treatment and improvement



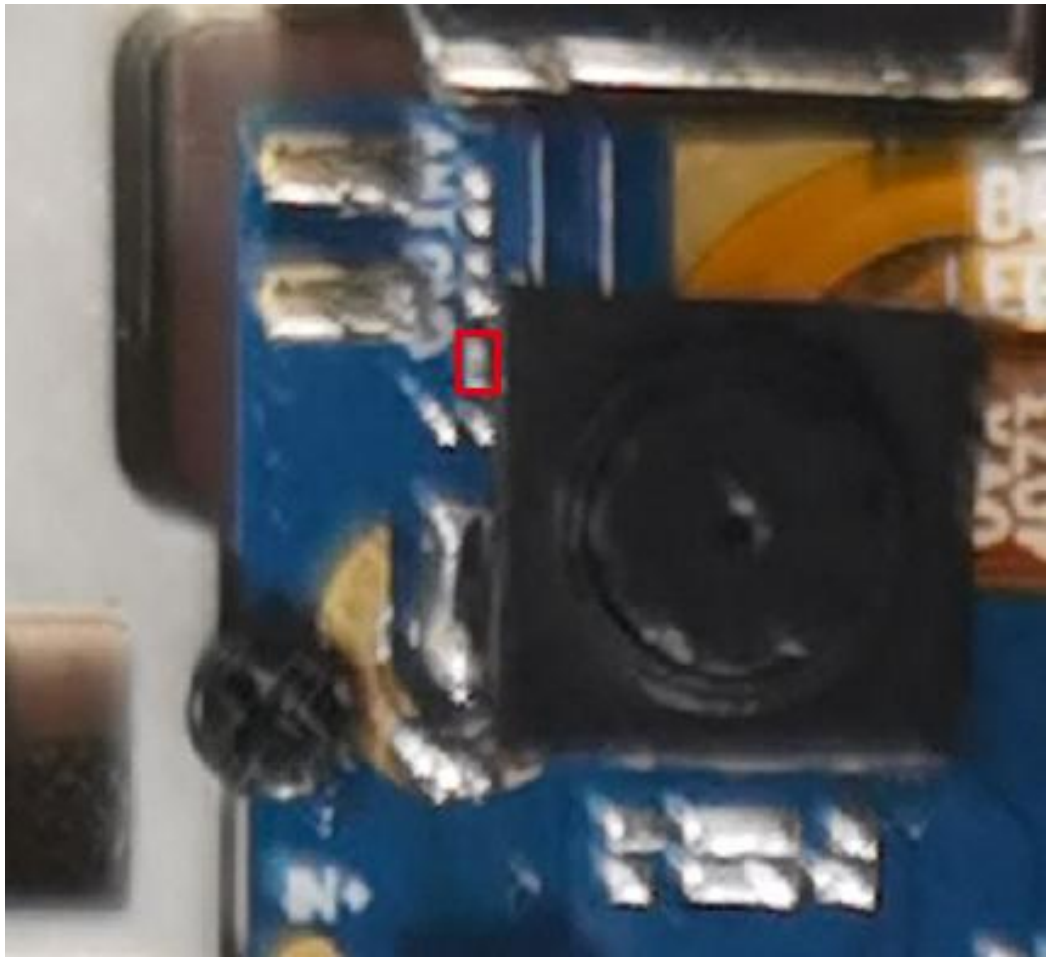
1. Motherboard and screen grounding.
2. The earphone socket is shielded with conductive cloth.

Antenna environment treatment and improvement



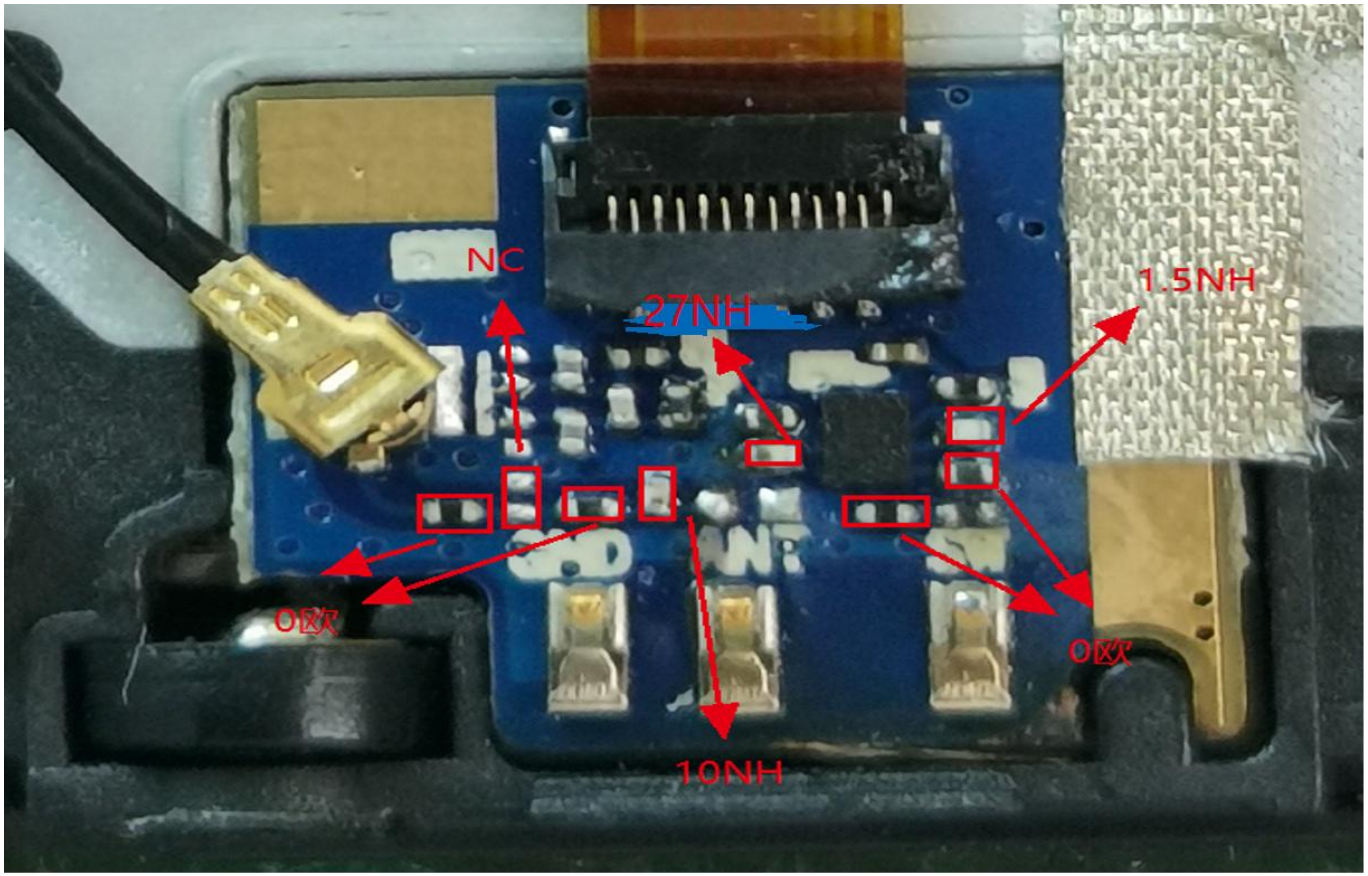
1. The small plate and the middle frame are grounded with double-sided conductive cloth.
2. Speaker grounding.

DRX matching



1. String 4.3PF, parallel NC

Small plate matching



Switch logic

RF1（0 Euro）	GSM	900/1800/1900
	WCDMA	B2
	LTE	B2/7
RF2（1.5NH）	GSM	850
	WCDMA	B4/5
	LTE	B4/5
RF3（27NH）	GSM	
	WCDMA	
	LTE	B12/13/17

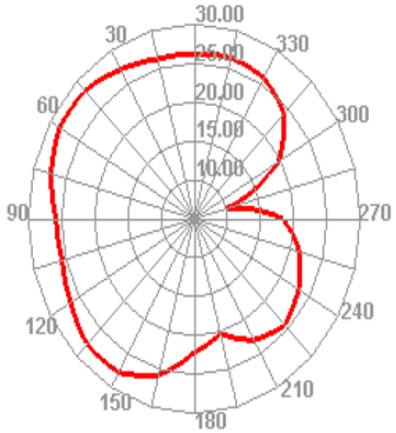
Antenna gain

Band	Gain (MAX)
GSM850	0.58
EGSM900	0.45
DCS1800	0.61
PCS1900	0.57
WCDMA1700	0.59
WCDMA1900	0.57
WCDMA850	0.58
Band2	0.57
Band4	0.59
Band5	0.58
Band7	0.64
Band12	0.52
Band13	0.52
Band17	0.52

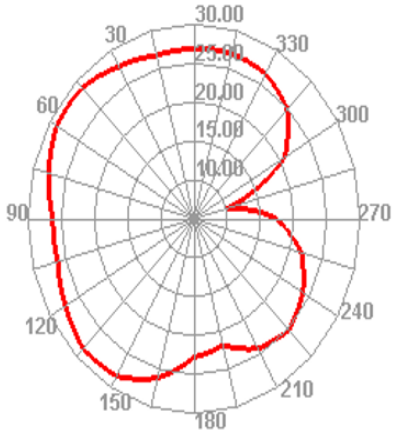
GPS	1.09
WiFi2.4G	1.05
BT	1.05
WiFi5G	1.05

Apple diagram

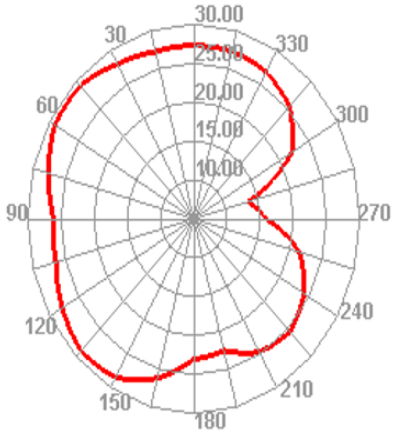
GSM850 128 TRP Phi=45



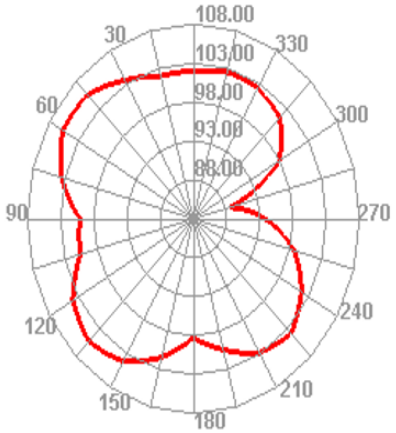
GSM850 190 TRP Phi=45



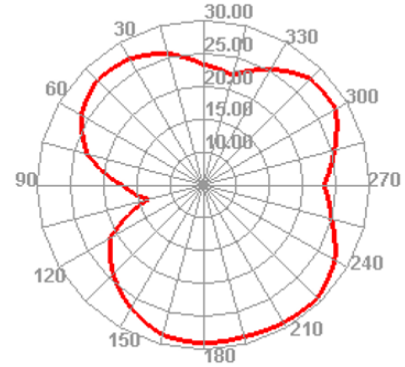
GSM850 251 TRP Phi=45



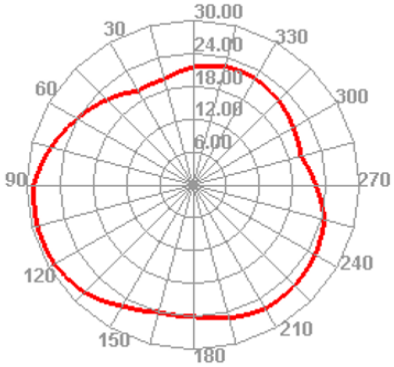
GSM850 251 TIS Phi=45



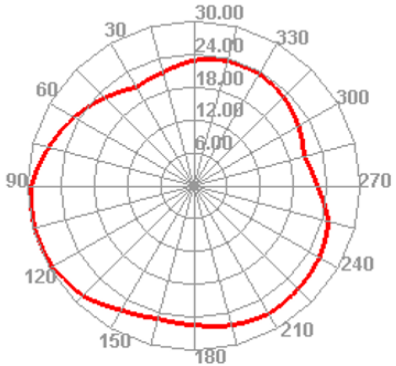
EGSM 1 TRP Phi=45



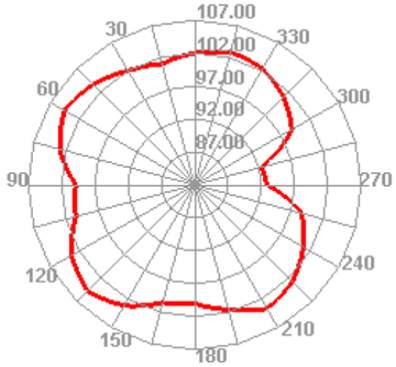
EGSM 62 TRP Phi=45



EGSM 124 TRP Phi=45

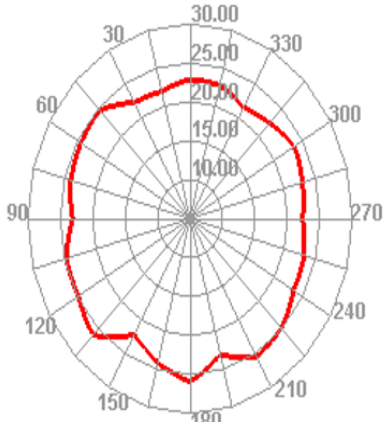


EGSM 124 TIS Phi=45

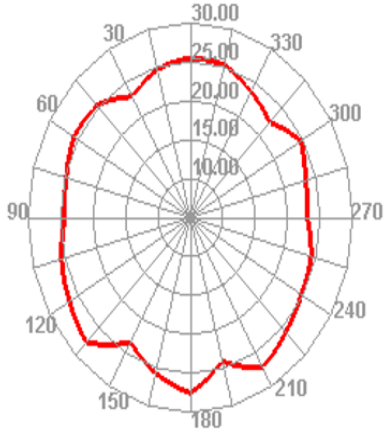


Apple diagram

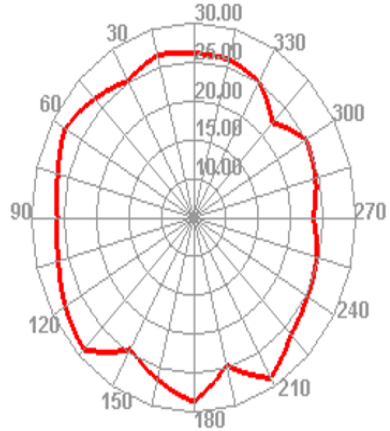
DCS 512 TRP Phi=45



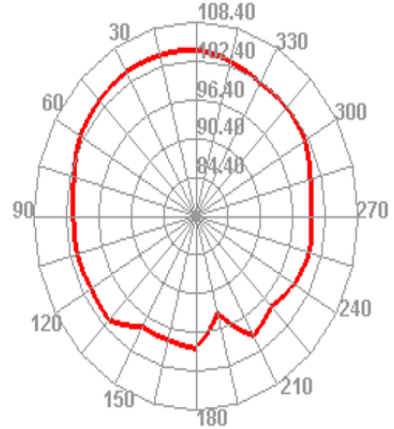
DCS 698 TRP Phi=45



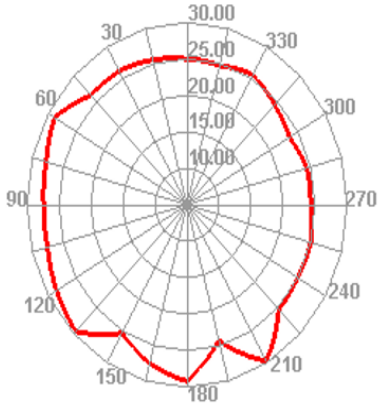
DCS 885 TRP Phi=45



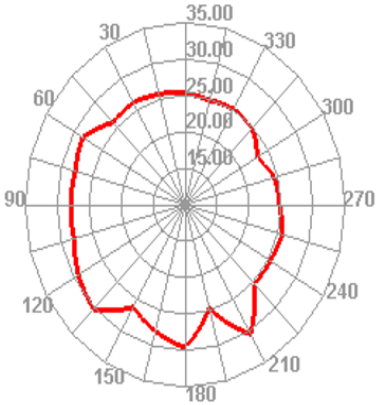
DCS 885 TIS Phi=45



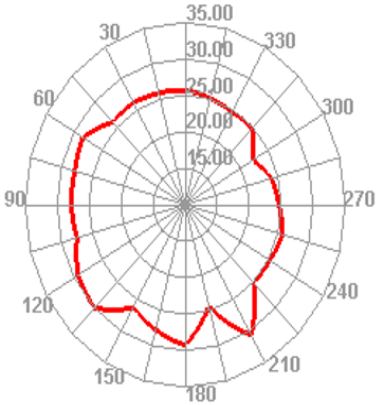
PCS 512 TRP Phi=45



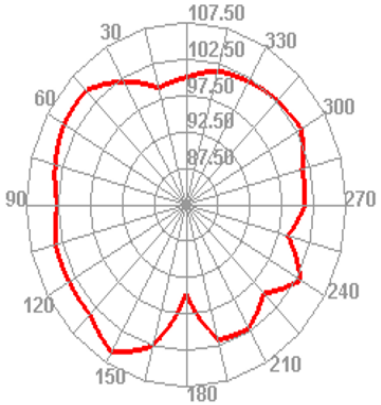
PCS 661 TRP Phi=45



PCS 810 TRP Phi=45

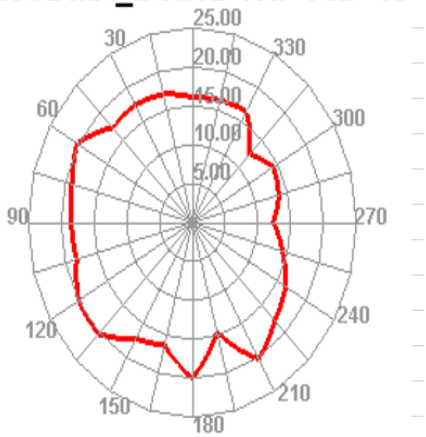


PCS 810 TIS Phi=45

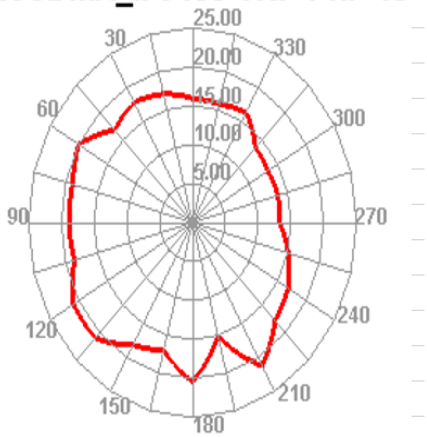


Apple diagram

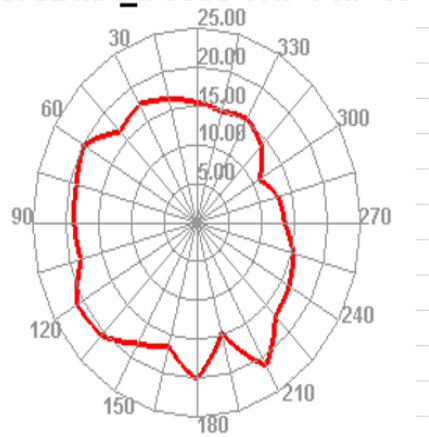
WCDMA_II 9262 TRP Phi=45



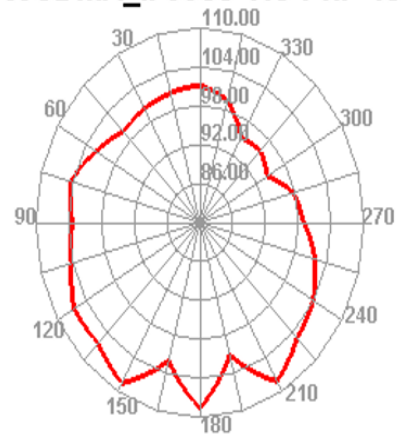
WCDMA_II 9400 TRP Phi=45



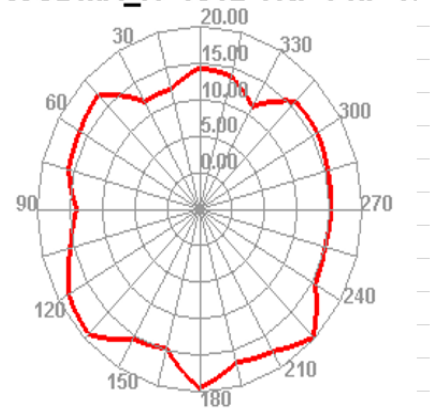
WCDMA_II 9538 TRP Phi=45



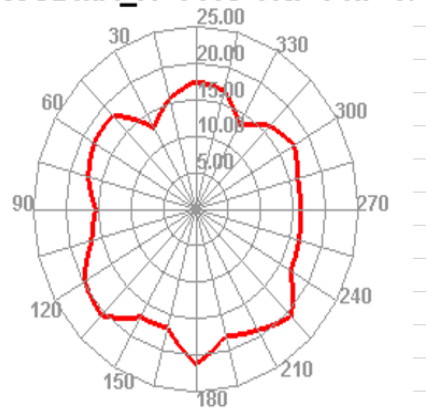
WCDMA_II 9938 TIS Phi=45



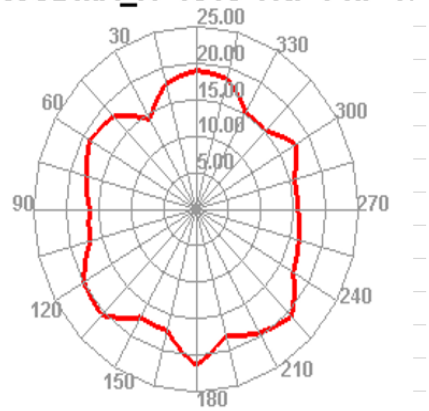
WCDMA_IV 1312 TRP Phi=4



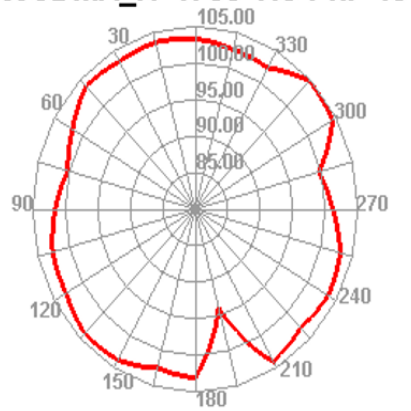
WCDMA_IV 1413 TRP Phi=4



WCDMA_IV 1513 TRP Phi=4

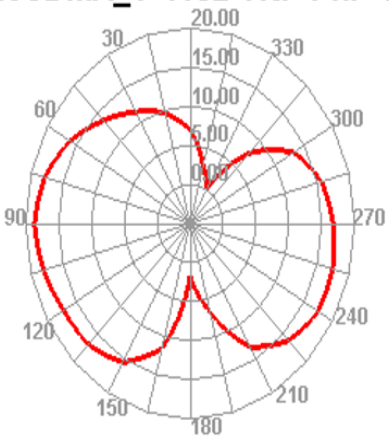


WCDMA_IV 1738 TIS Phi=45



Apple diagram

WCDMA_V 4132 TRP Phi=45



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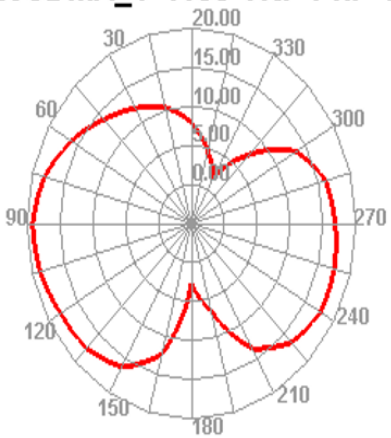
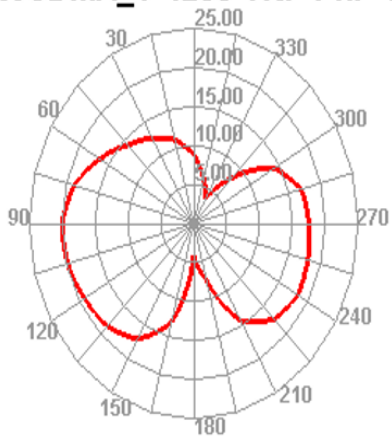
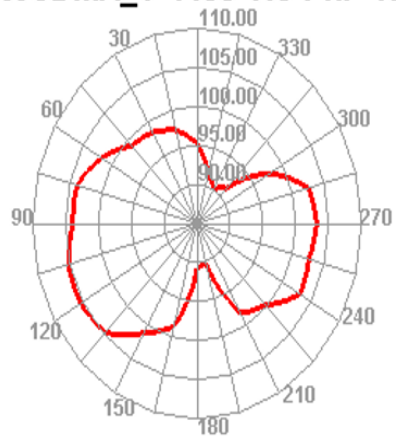


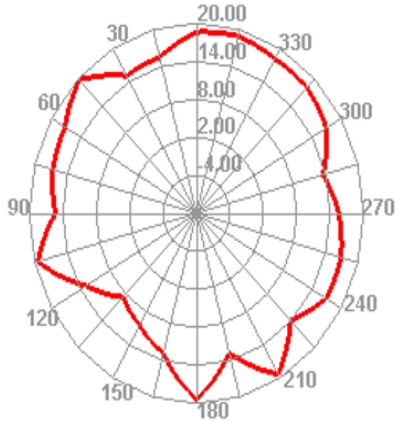
WCDMA_V 4233 TRP Phi=45



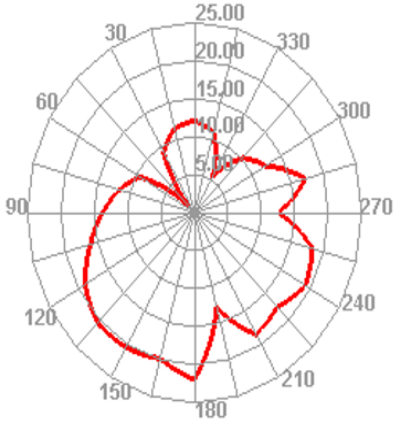
WCDMA_V 4458 TIS Phi=45



LTE2 18650 TRP Phi=45



LTE2 18900 TRP Phi=45



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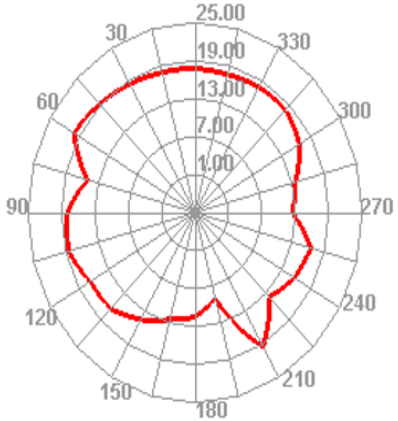
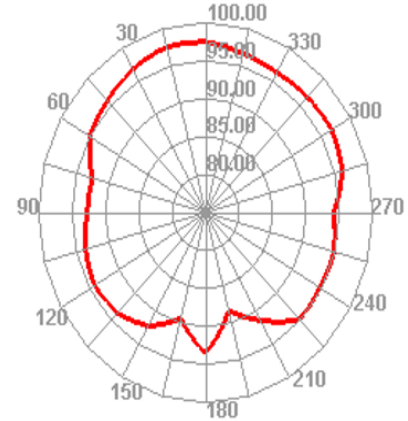
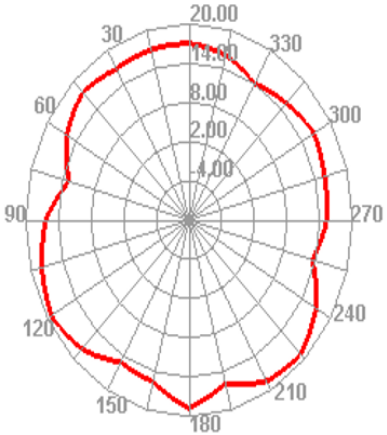


LTE2 1150 TIS Phi=45

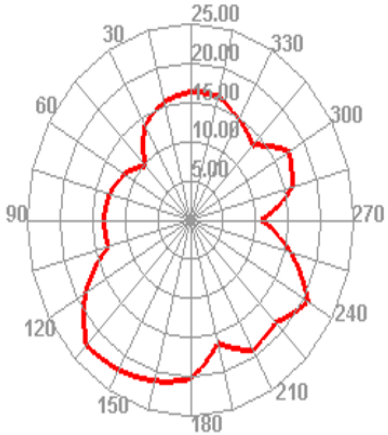


Apple diagram

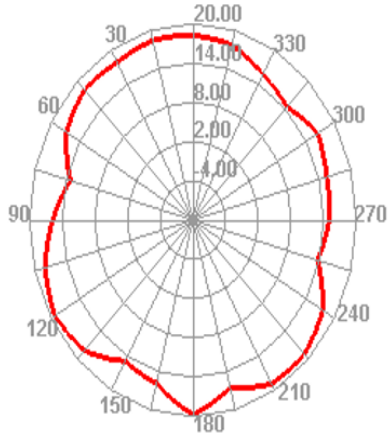
LTE4 20000 TRP Phi=45



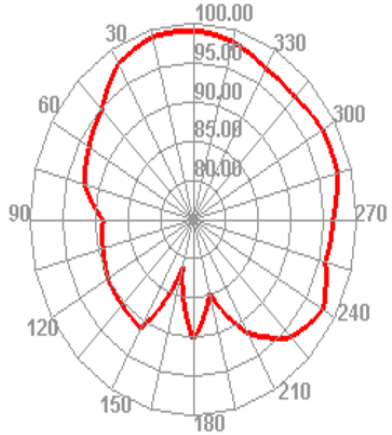
LTE4 20175 TRP Phi=45



LTE4 20350 TRP Phi=45



LTE4 2350 TIS Phi=45



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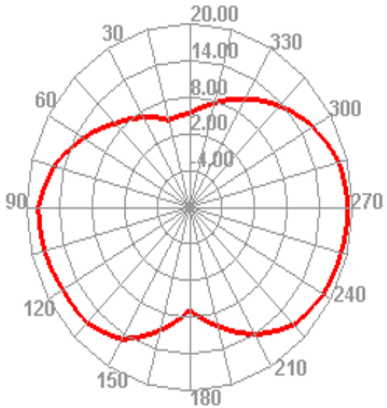

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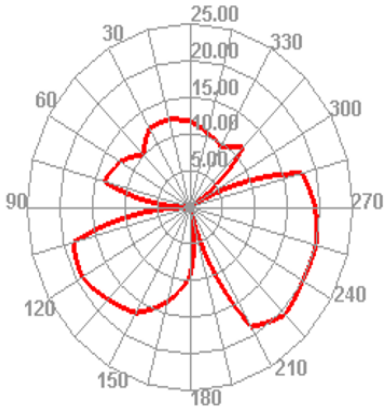
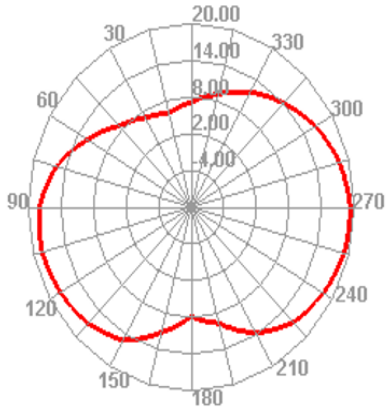
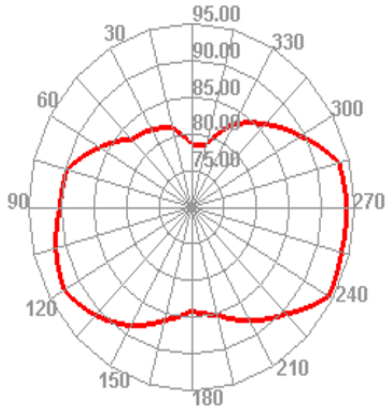


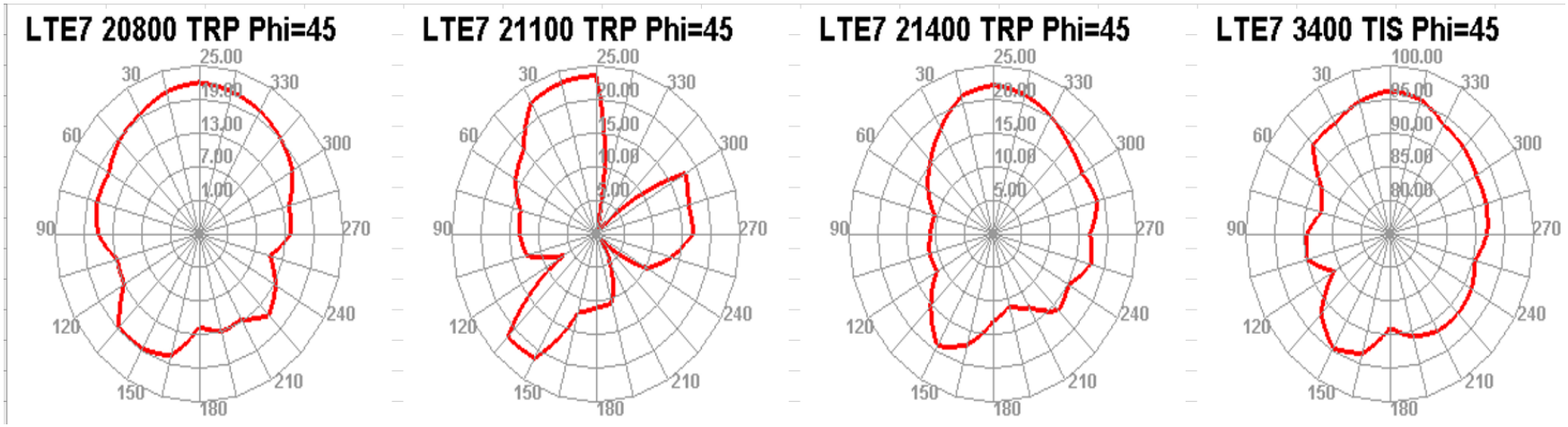
LTE5 20600 TRP Phi=45

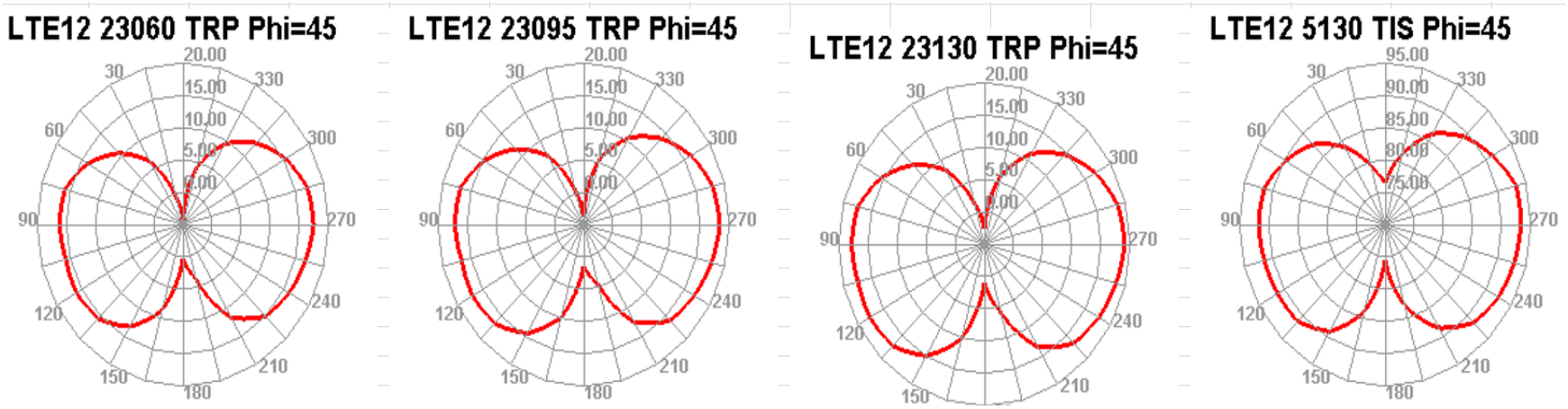


LTE5 2600 TIS Phi=45



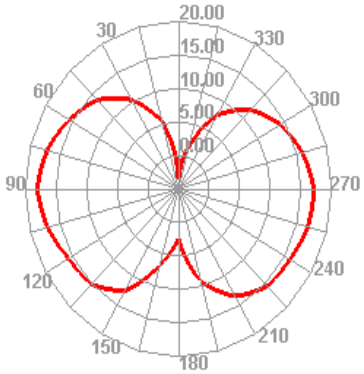
Apple diagram



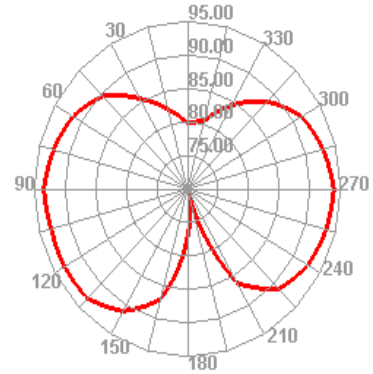


Apple diagram

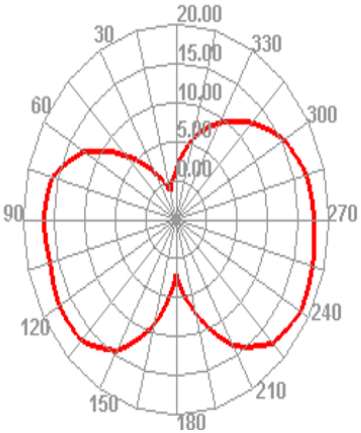
LTE13 23230 TRP Phi=45



LTE13 5230 TIS Phi=45



LTE17 23780 TRP Phi=45



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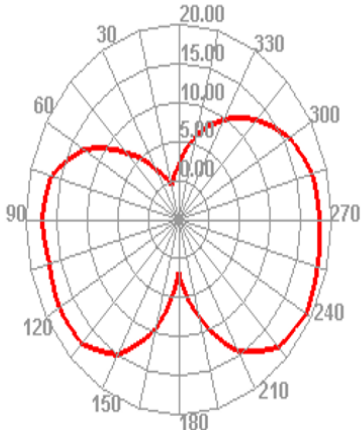

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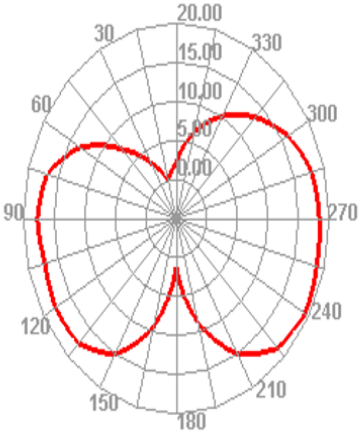
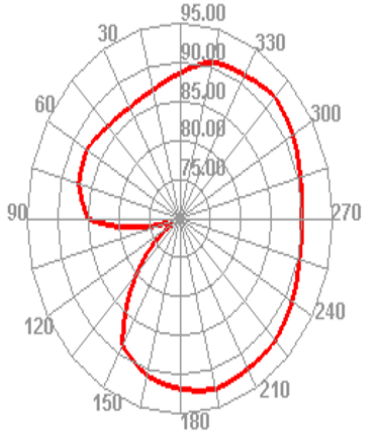
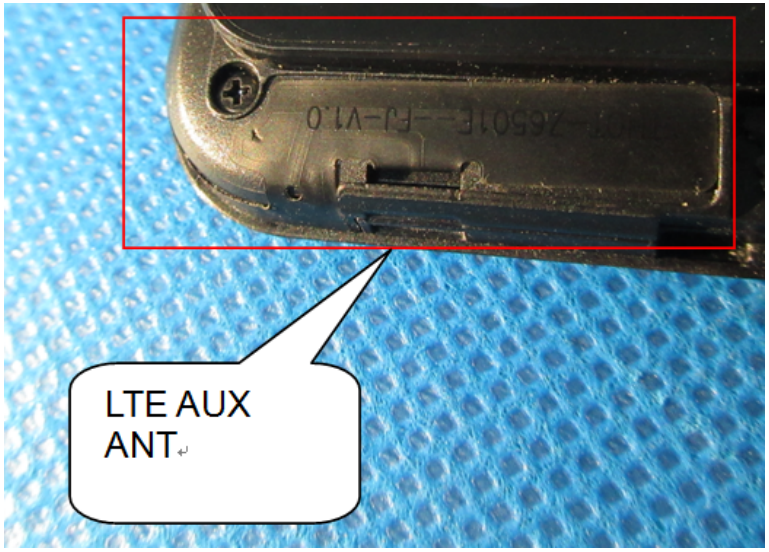
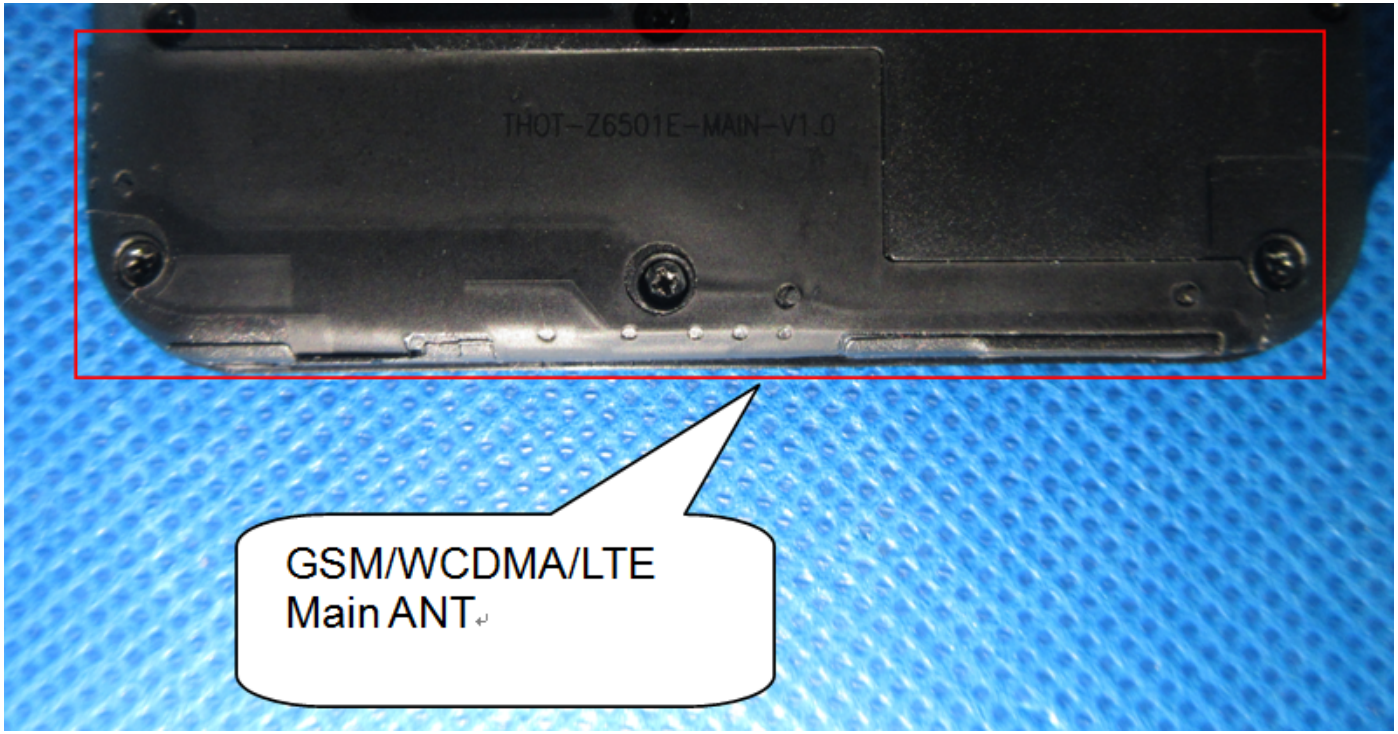


LTE17 5800 TIS Phi=45



BT/WIFI ANT


LTE AUX
ANT


THOT-Z6501E-MAIN-V1.0
GSM/WCDMA/LTE
Main ANT

Thank you!

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