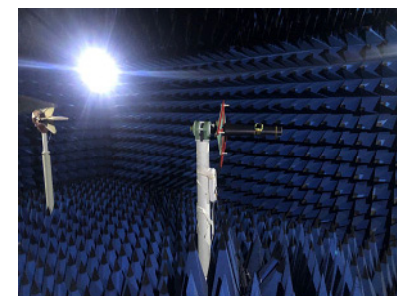


Commissioning report of Z5018K antenna

Radio frequency: He Lei

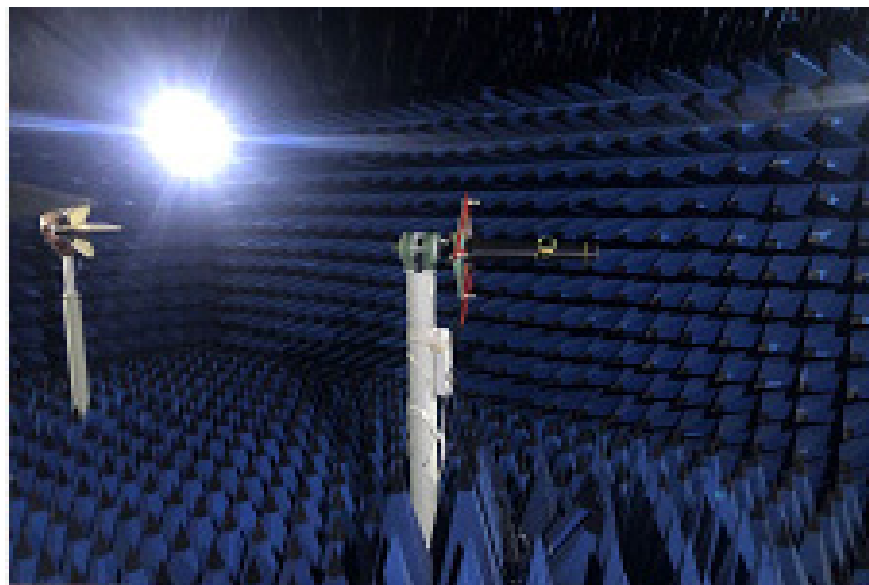
Date: January 3, 2023

Contact information:



Project development environment

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



Yu Sheng communication products cover almost all wireless terminal equipment antenna applications, including car antenna, high precision surveying antenna, drone ground and satellite data navigation, high precision positioning antenna, medical equipment wireless transmission, consumer antenna (mobile phone antenna, PAD, laptop antenna), base station / indoor distribution antenna, smart wear antenna (smart watches, TWS headphones), security household antenna and a variety of wireless data transmission and wireless control of intelligent equipment antenna, etc.

1

Project commissioning brief

2

Outline of the report version

3

Antenna active parameters

4

Antenna passive parameter

5

Antenna environment treatment
and improvement

6

Summary & additional note

Project commissioning brief

type	cellphone			
template	motherboard			
Frequency band and antenna material	main antenna	frequency range		material quality
		2G	GSM850/900/1800/1900	FPC
		3G	WCDMA B 1/2/5/8	
		4G	LTE B2/3/4/7/28AB	
	Other antennas	GWB	1575. 42MHz/2. 450GHz	FPC
		DRX	1700MHz -2700MHz	FPC
performance requirement	According to the customer's requirements			

Outline of the report version

Antenna version	Report time	The problem solved by the antenna development
V1.0	2023-1-3	Trial er test report

Active parameters of the main antenna

Test	GSM 850			EGSM 900		
Channel	128	190	251	1	62	124
TRP (dBm)	26.43	26.62	26.51	26.26	25.44	24.21
TIS (dBm)			-102.38			-100.49

Test	DCS 1800			PCS 1900		
Channel	512	698	885	512	661	810
TRP (dBm)	24.31	24.69	25.23	24.75	25.14	24.82
TIS (dBm)			-102.68			-102.31

Active parameters of the main antenna

Test	WCDMA_I			WCDMA_II		
Channel	10562	10700	10838	9662	9800	9938
TRP (dBm)	17.23	17.05	17.01	17.36	17.44	17.25
TIS (dBm)			-103.25			-103.14

Test	WCDMA_V			WCDMA_V III		
Channel	4357	4408	4458	2937	3013	3088
TRP (dBm)	16.35	16.47	16.55	15.28	14.39	14.14
TIS (dBm)			-102.36			-100.25

Active parameters of the main antenna

Test	FDD B2			FDD B3		
Channel	18650	18900	19150	19250	19575	19900
TRP (dBm)	18.09	18.12	18.45	18.13	18.44	18.25
TIS (dBm)			-93.25			-92.39

Test	FDD B4			FDD B7		
Channel	20050	20175	20350	20800	21100	21400
TRP (dBm)	17.41	17.47	17.36	18.13	17.89	17.68
TIS (dBm)			-93.26			-92.35

Test	FDD B28A			FDD B28B		
Channel	27260	27360	27460	27410	27510	27610
TRP (dBm)	15.44	16.13	16.25	15.58	16.04	16.37
TIS (dBm)			-90.18			-90.23

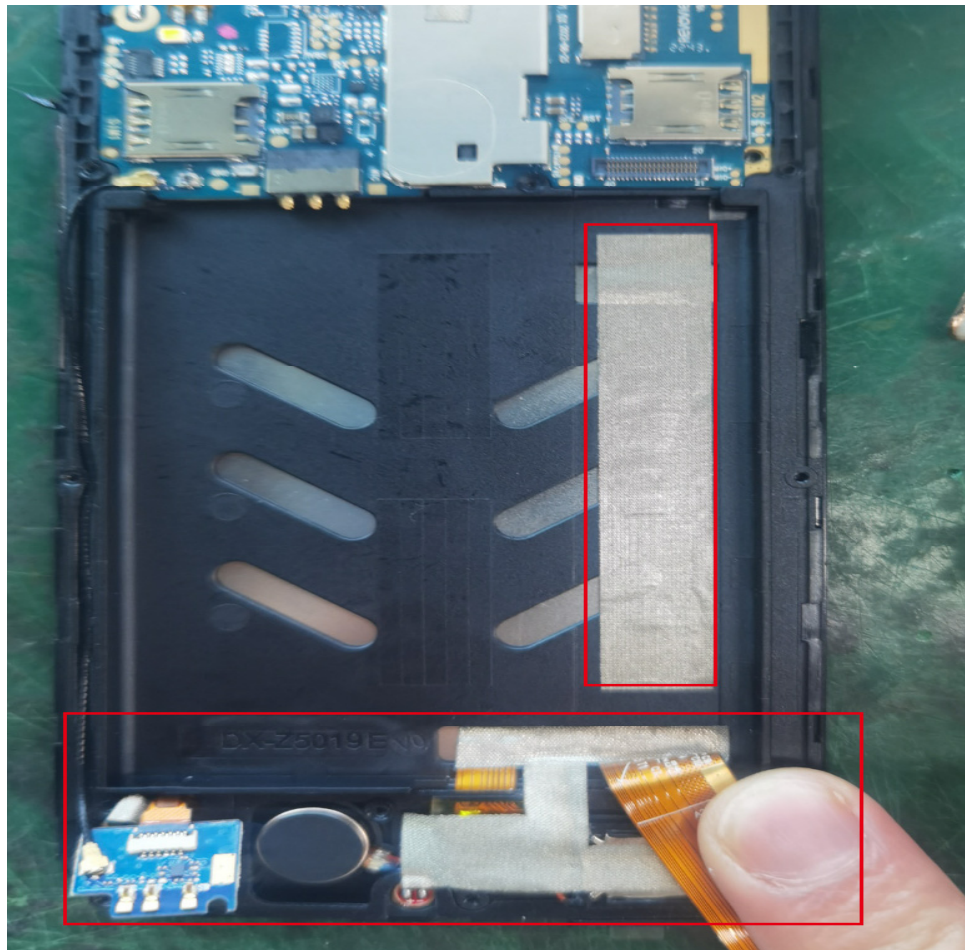
GPS actual measurement



Switch logic

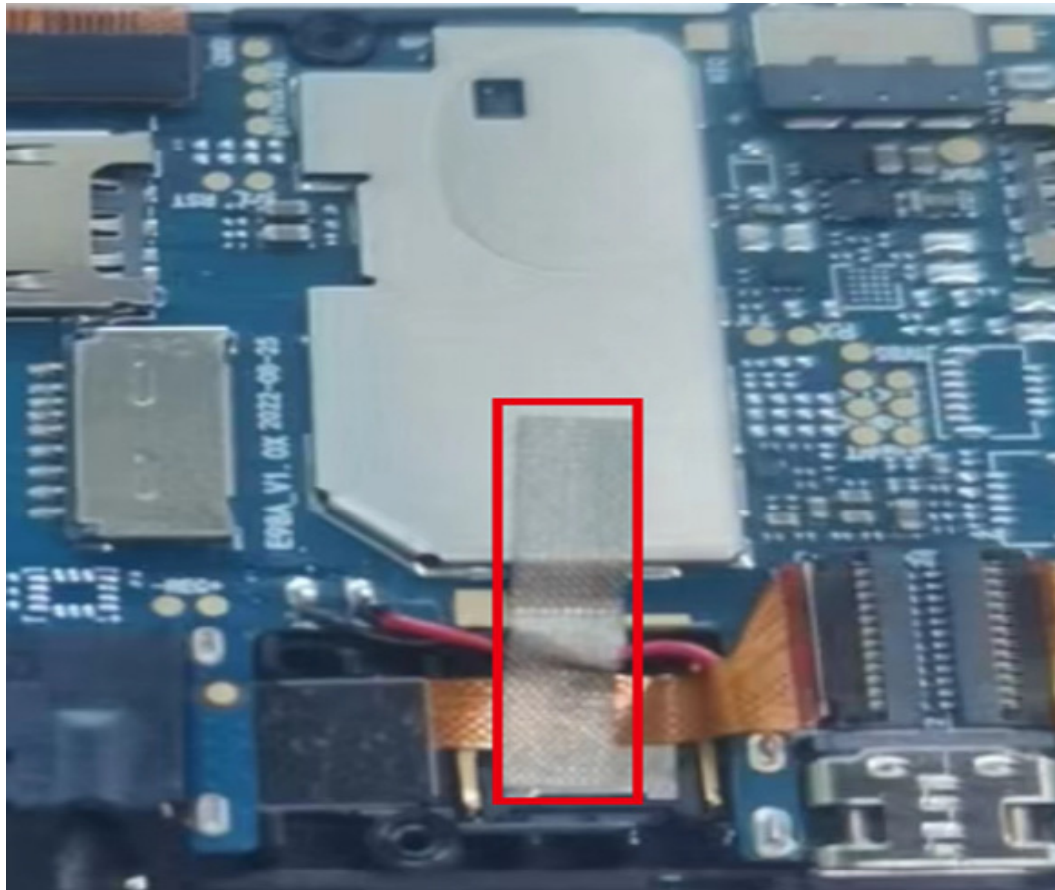
RF1 (0.0. M.)	GSM	900
	WCDMA	B8
	LTE	B7
RF2 (3.3NH)	GSM	850/1800/1900
	WCDMA	B1/2/5
	LTE	B2/3/4
RF3 (27NH)	LTE	B28AB
	GSM	
	WCDMA	
	LTE	

Antenna environment treatment and improvement



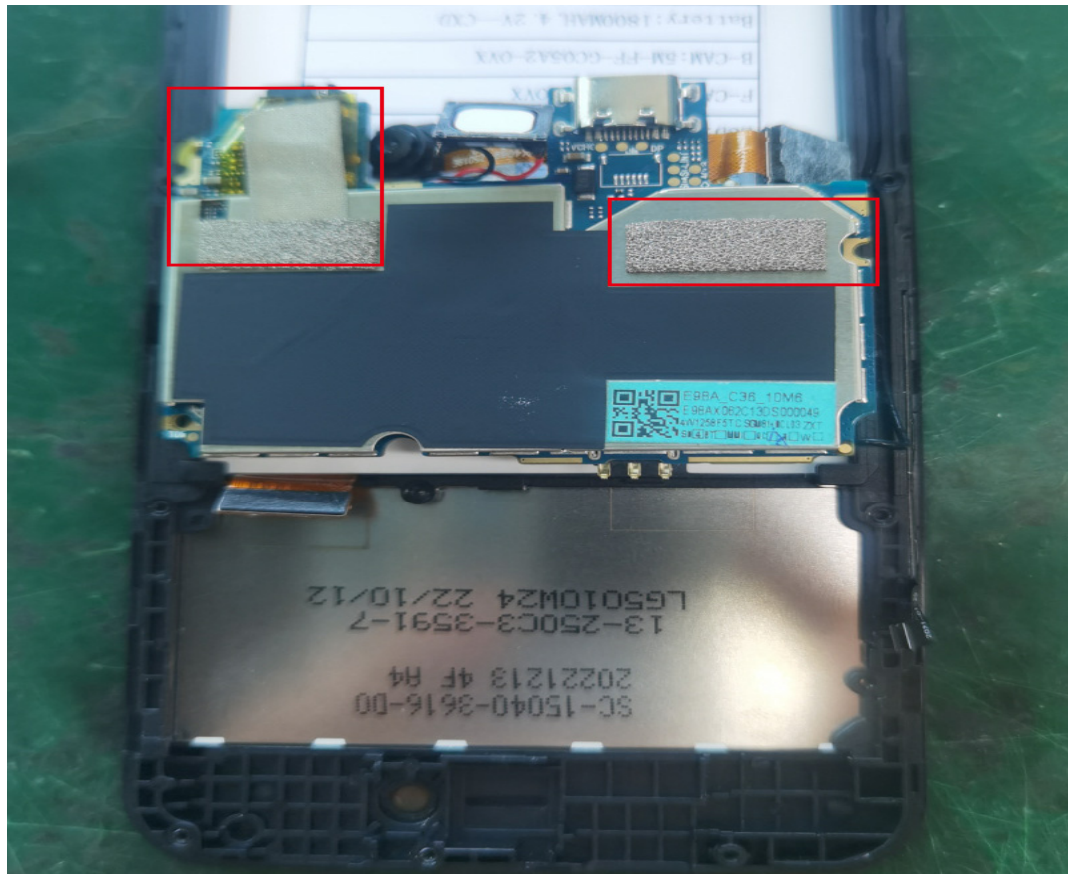
1. Put a conductive cloth in the red box for shielding processing
2. The screen FPC is screened with a conductive cloth

Antenna environment treatment and improvement



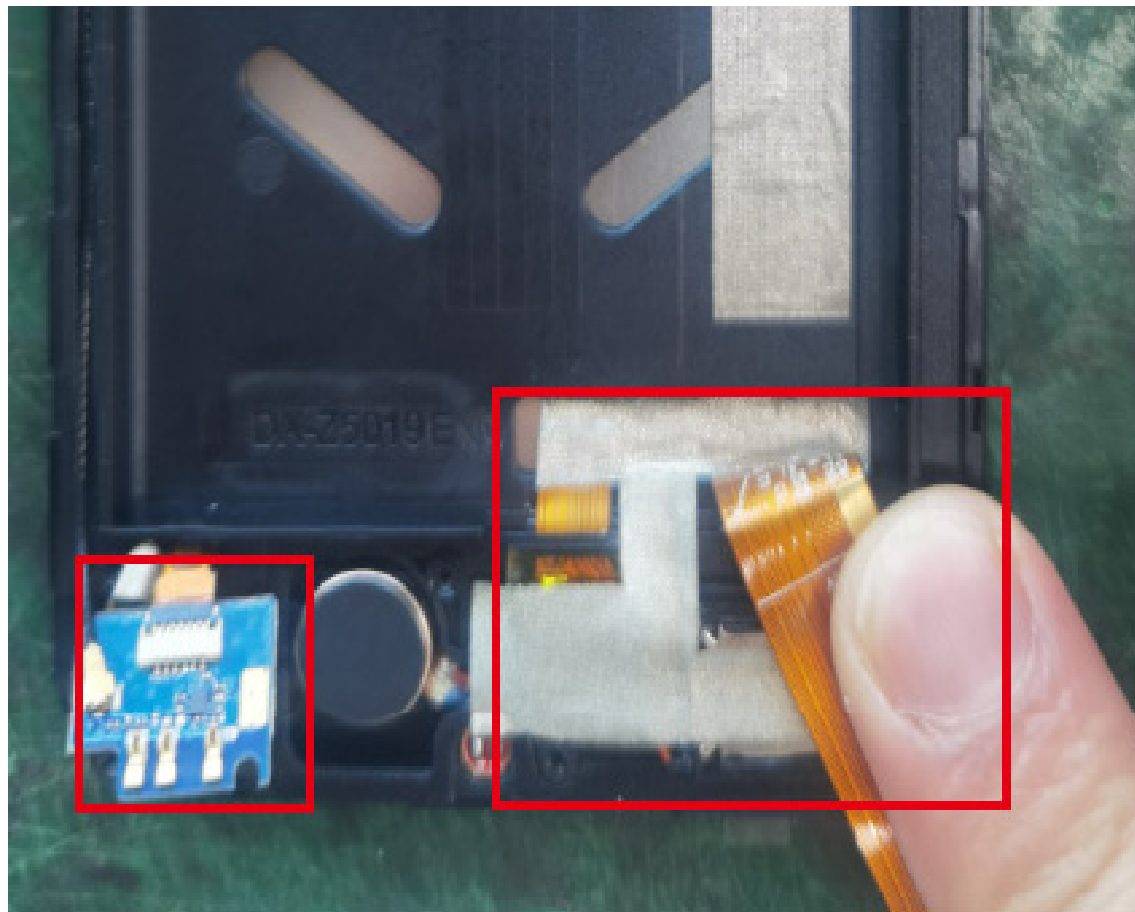
1. The handset is grounded with a conductive cloth

Antenna environment treatment and improvement



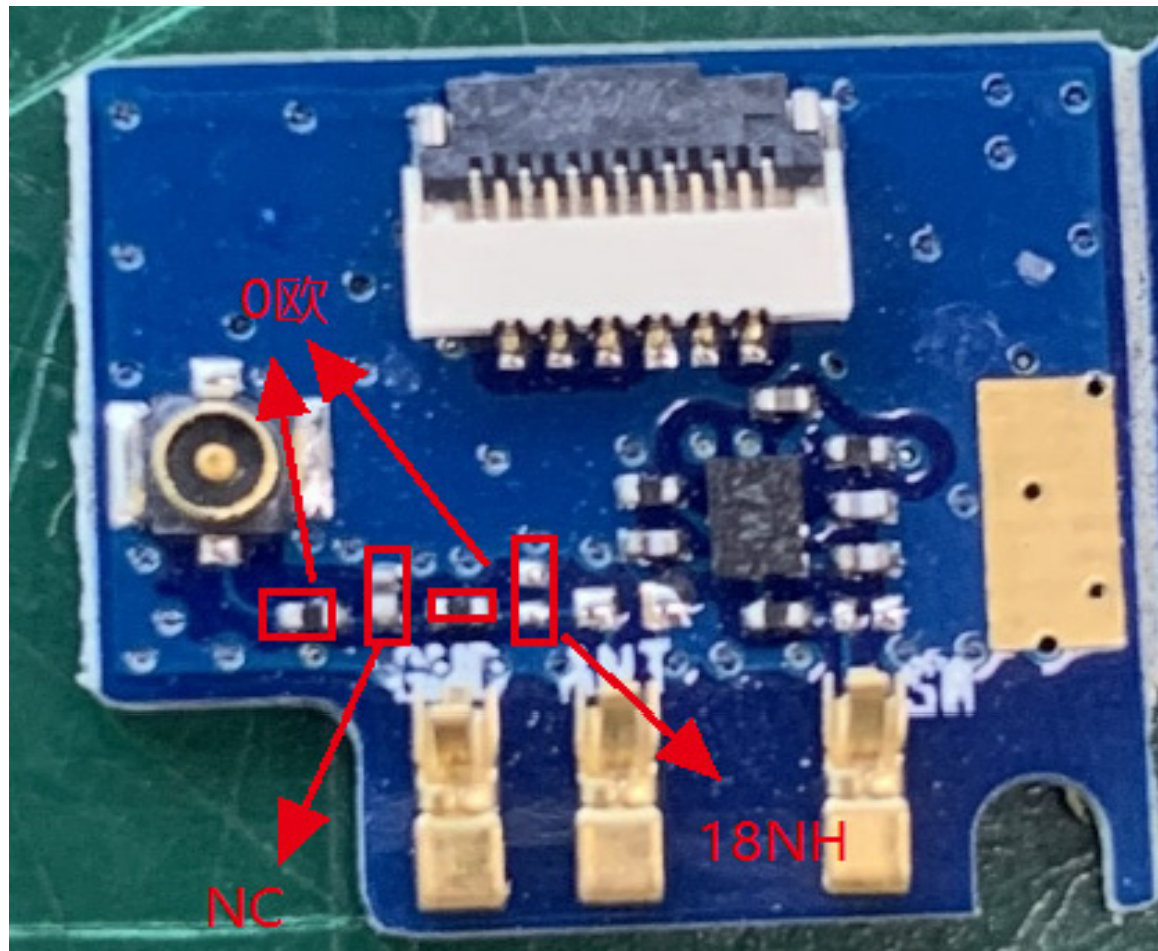
- 1, the mainboard and the screen grounding
2. The earphone holder is screened with a conductive cloth

Antenna environment treatment and improvement



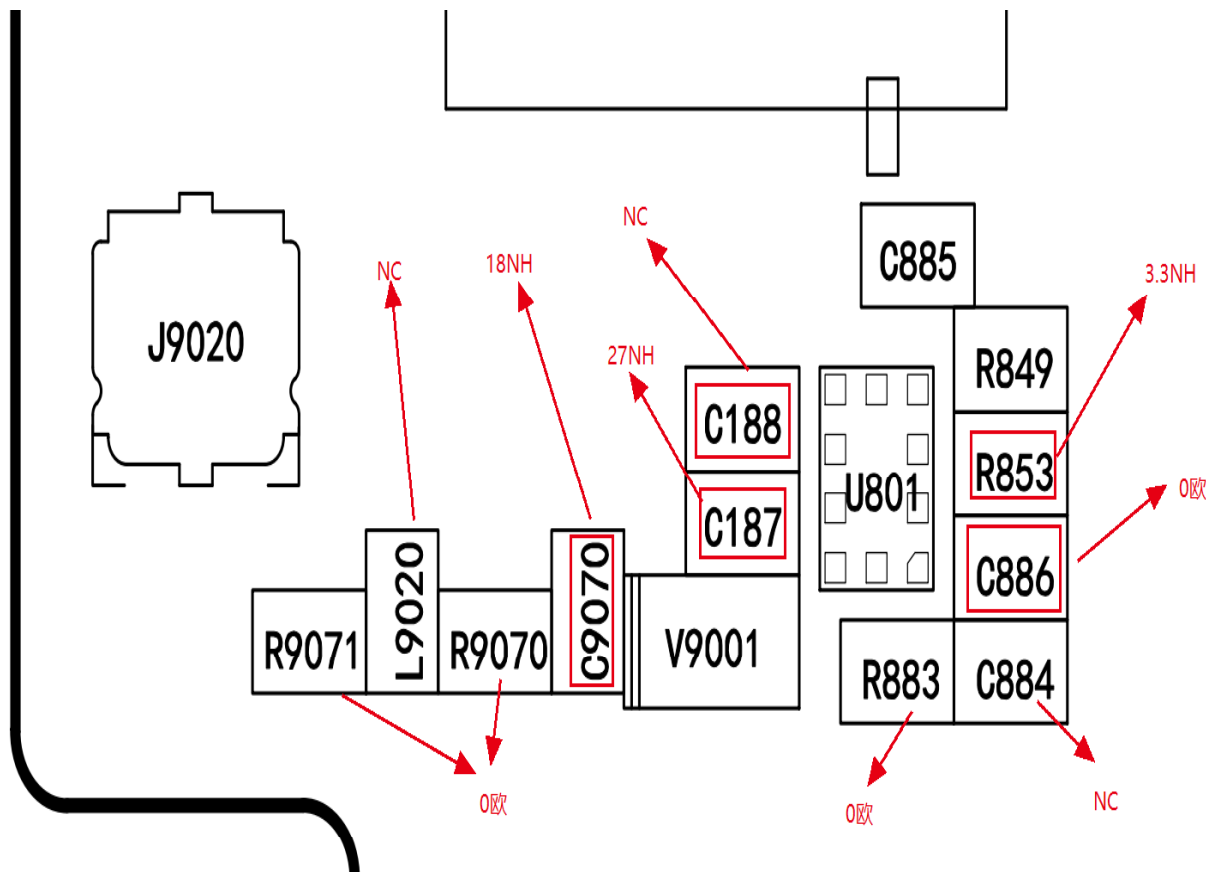
1, the small board and the screen with double-sided conductive cloth grounding
2, the horn is grounded, please pay attention to the contact between the conductive cloth and the screen, must ensure the conduction

Small board match



- 1, the main road and 18 NH, string 0 0u
- 2, RF1:0 euro
RF2: 3.3NH
RF3: 27NH

Small board match



1, the main road and 18 NH,
string 0 0u
2, RF1:0 euro
RF2: 3.3NH
RF3: 27NH

MAIN ANT, Structure Fig



GWB ANT, Structure Fig



DIV ANT Composition

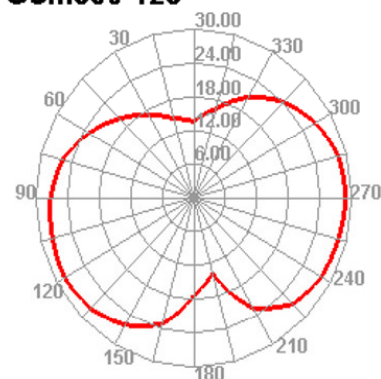


antenna gain

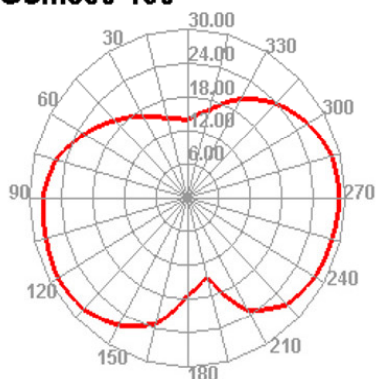
Band		Gain (MAX)	
GSM850	0.58	WiFi	1.03
EGSM900	0.41	BT	1.03
DCS1800	0.55	GPS	0.75
PCS1900	0.52		
WCDMA2100	0.62		
WCDMA850	0.58		
WCDMA900	0.41		
WCDMA1900	0.52		
Band2	0.52		
Band3	0.55		
Band4	0.47		
Band7	0.68		
Band28	0.53		

Apple figure

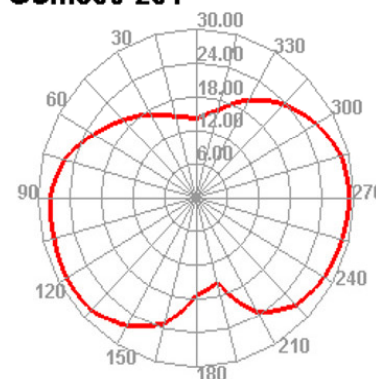
GSM850 128



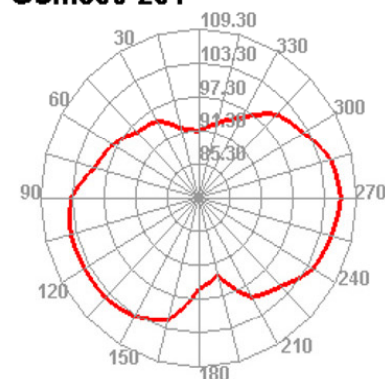
GSM850 190



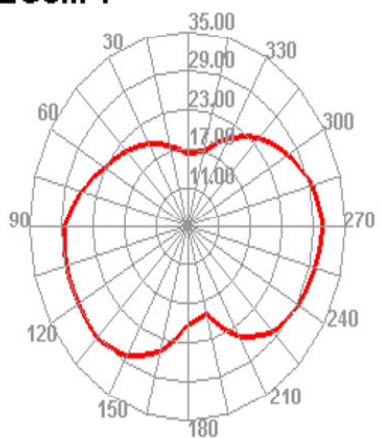
GSM850 251



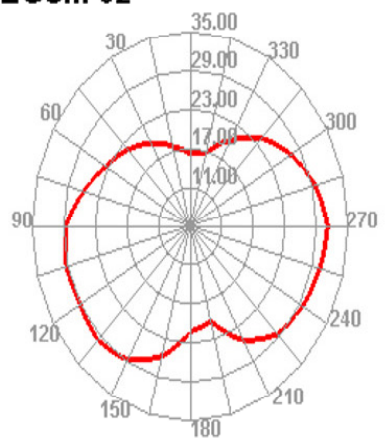
GSM850 251



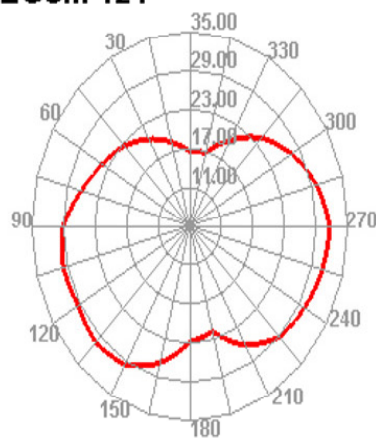
EGSM 1



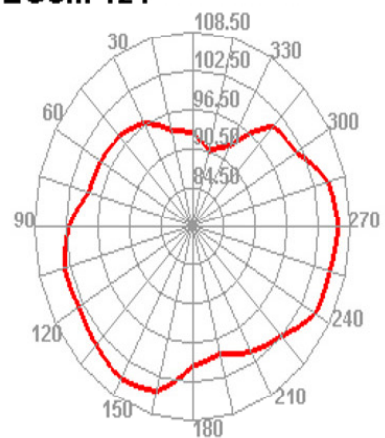
EGSM 62



EGSM 124

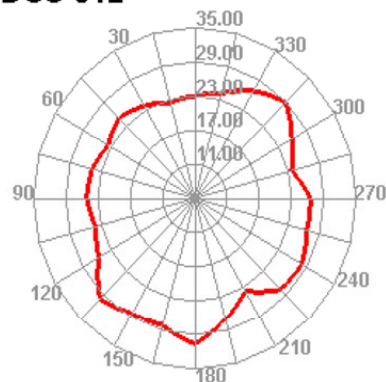


EGSM 124

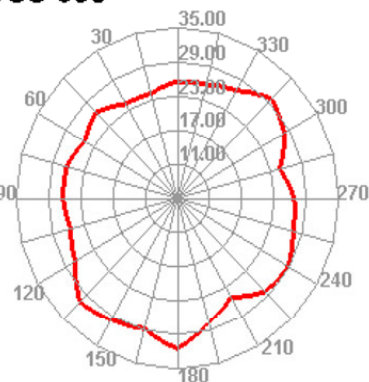


Apple figure

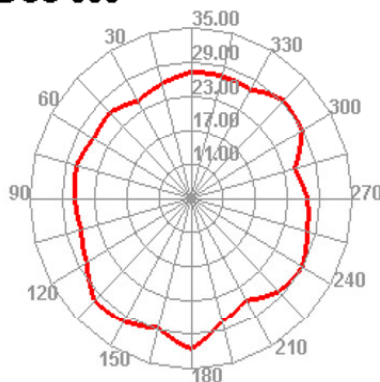
DCS 512



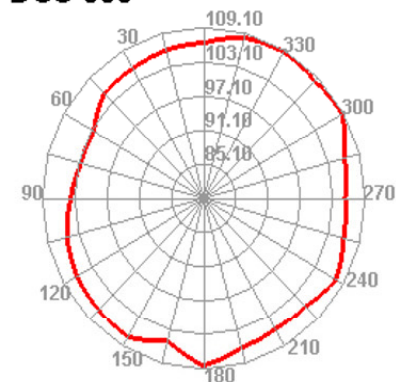
DCS 698



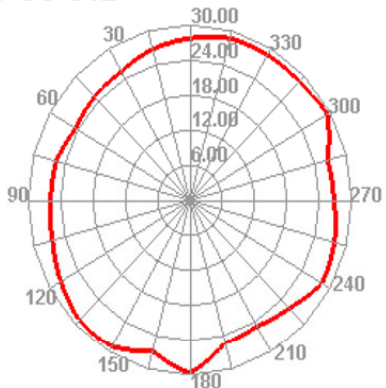
DCS 885



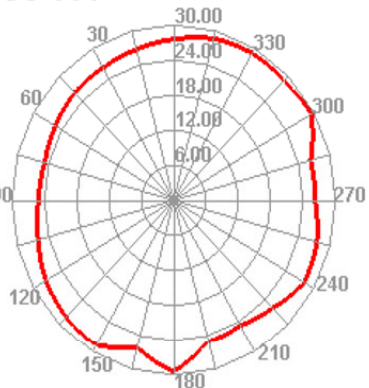
DCS 885



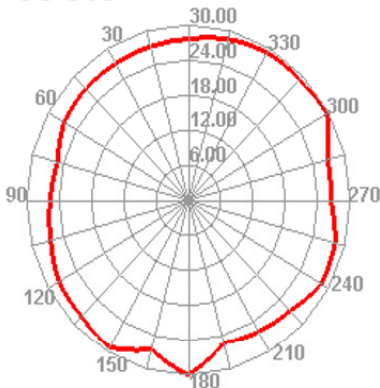
PCS 512



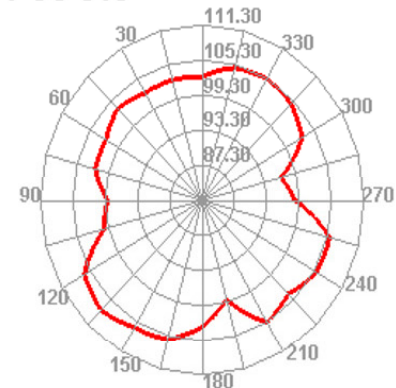
PCS 661



PCS 810

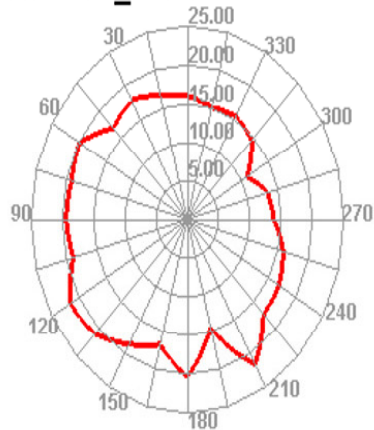


PCS 810

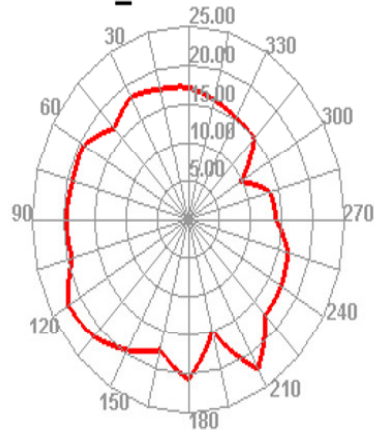


Apple figure

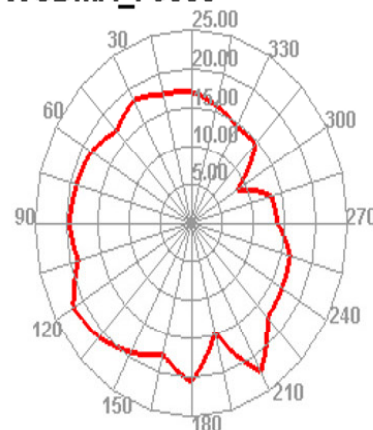
WCDMA_I 9612



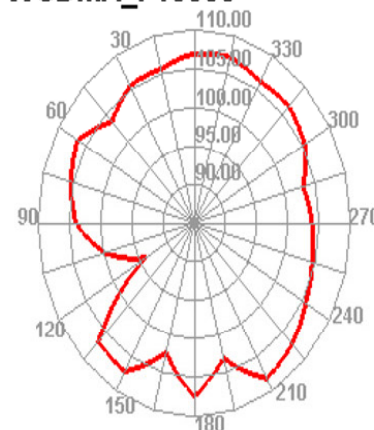
WCDMA_I 9750



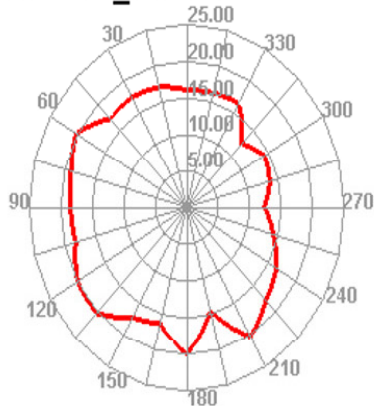
WCDMA_I 9888



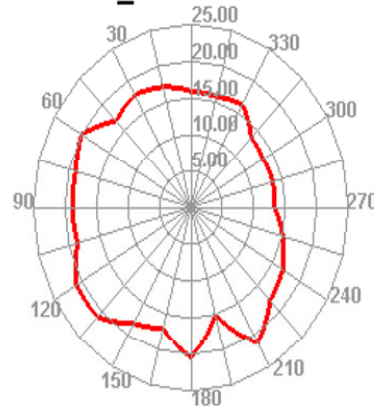
WCDMA_I 10838



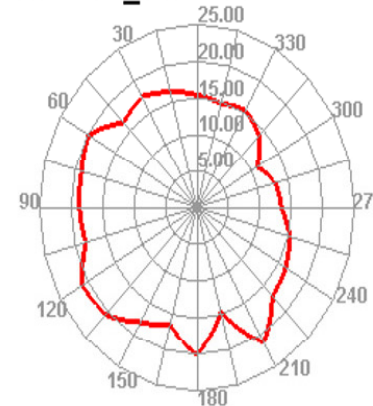
WCDMA_II 9262



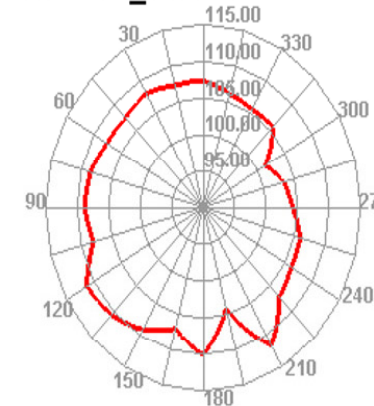
WCDMA_II 9400



WCDMA_II 9538

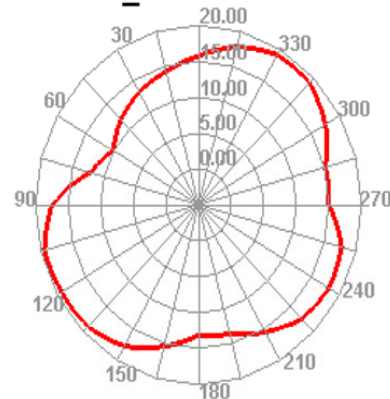


WCDMA_II 9938

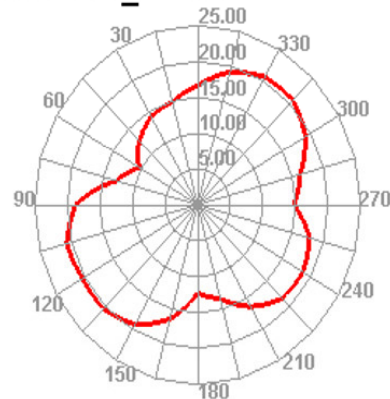


Apple figure

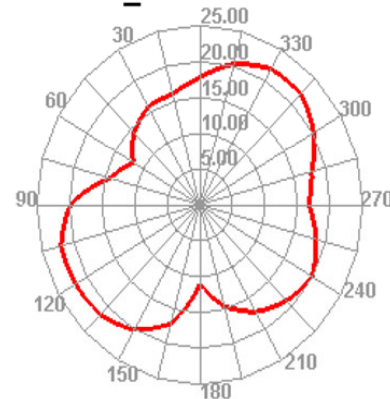
WCDMA_V 4132



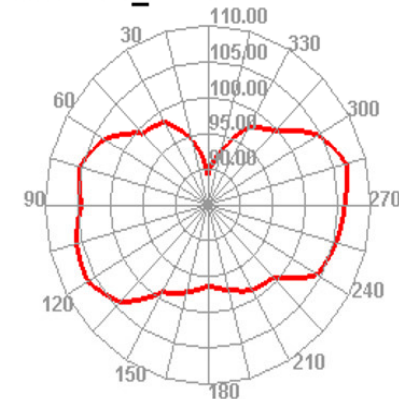
WCDMA_V 4185



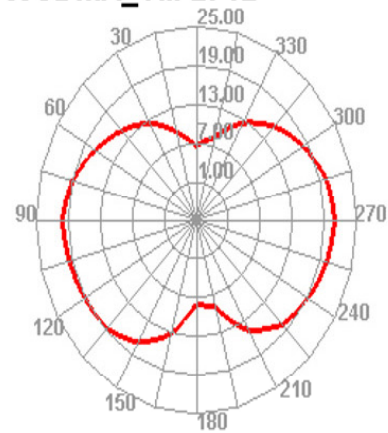
WCDMA_V 4233



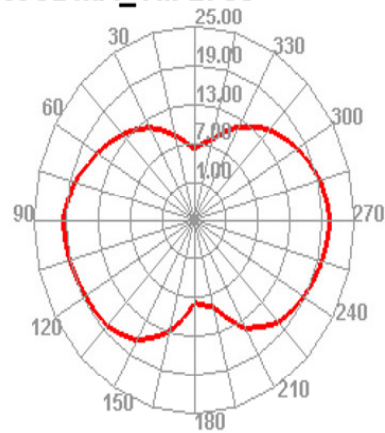
WCDMA_V 4458



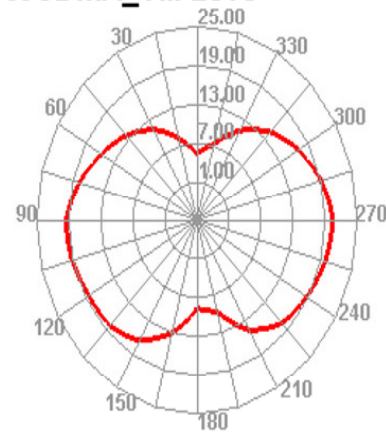
WCDMA_VIII 2712



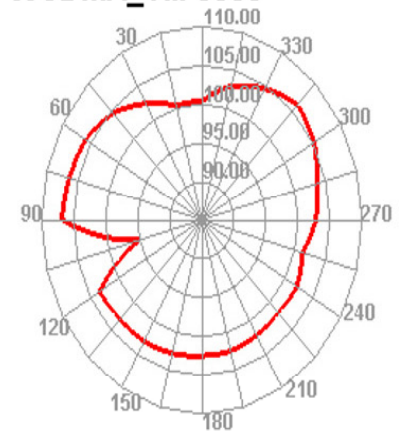
WCDMA_VIII 2788



WCDMA_VIII 2863

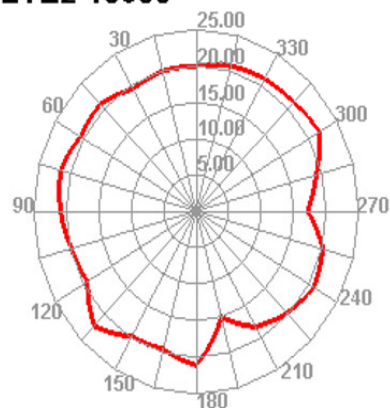


WCDMA_VIII 3088

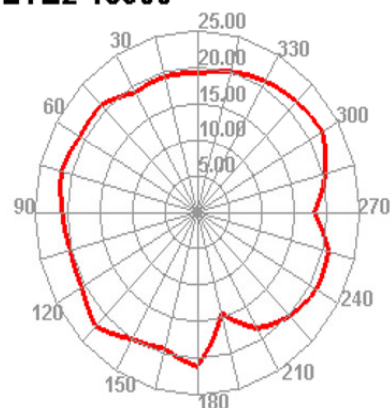


Apple figure

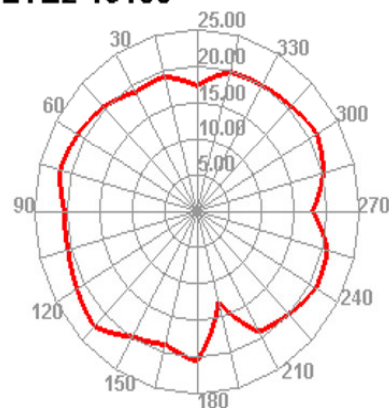
LTE2 18650



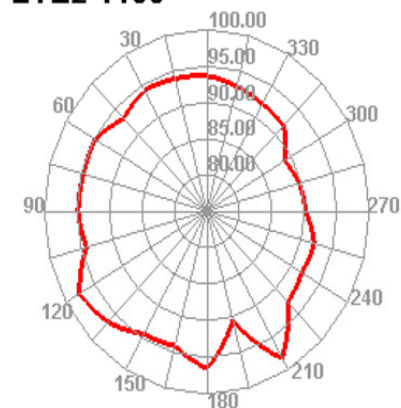
LTE2 18900



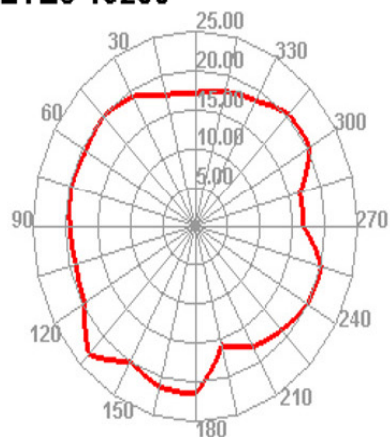
LTE2 19150



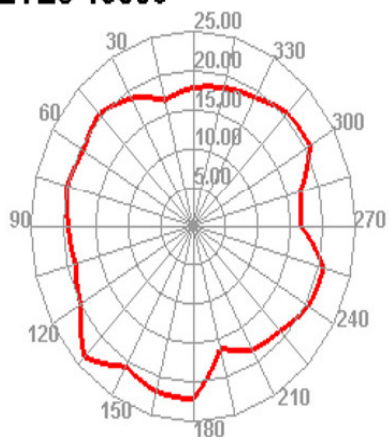
LTE2 1150



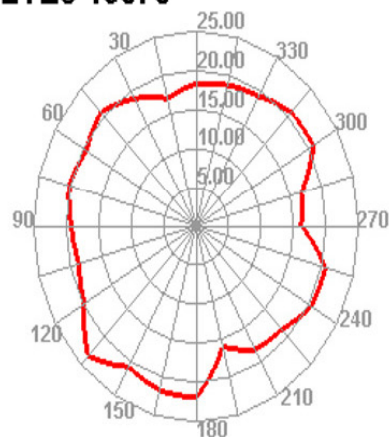
LTE3 19250



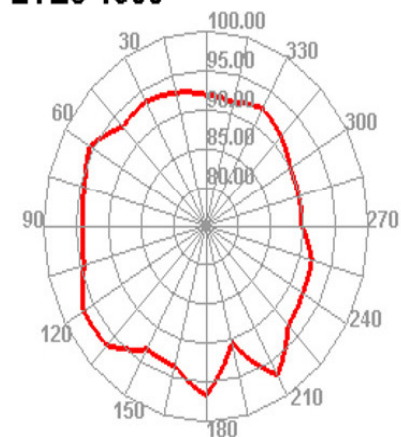
LTE3 19506



LTE3 19575

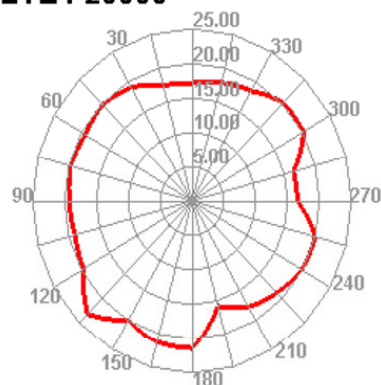


LTE3 1900

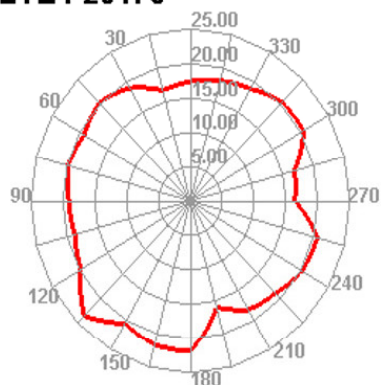


Apple figure

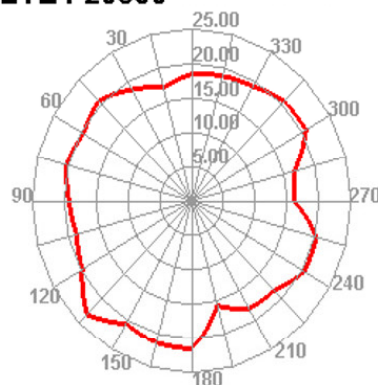
LTE4 20000



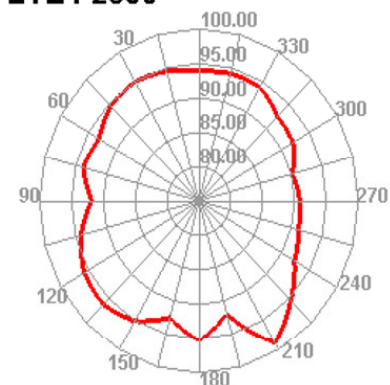
LTE4 20175



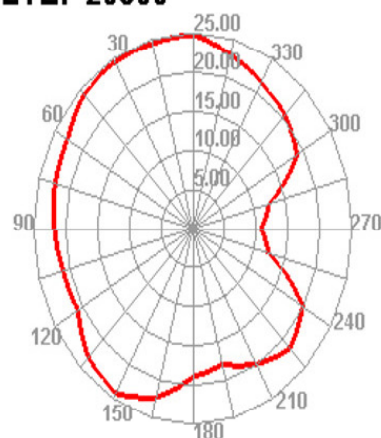
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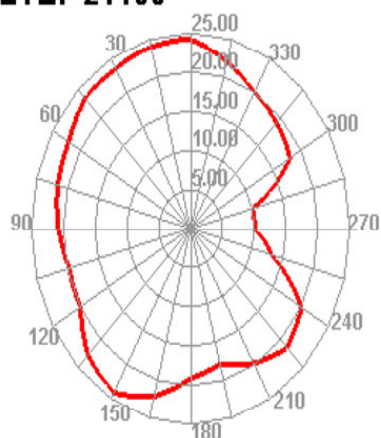
LTE4 2350



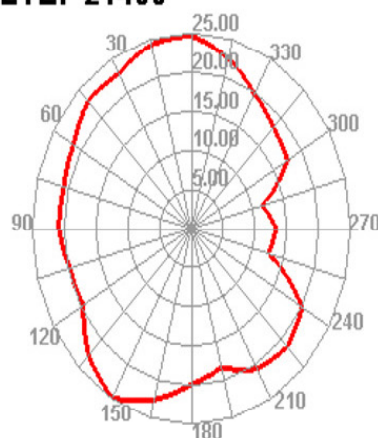
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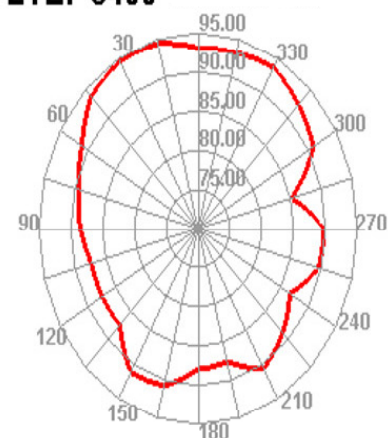
LTE7 21100



LTE7 21400

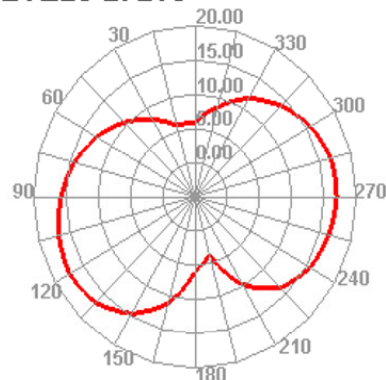


LTE7 3400

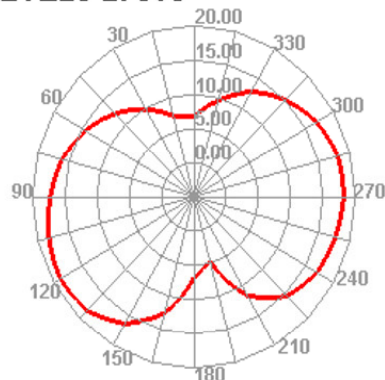


Apple figure

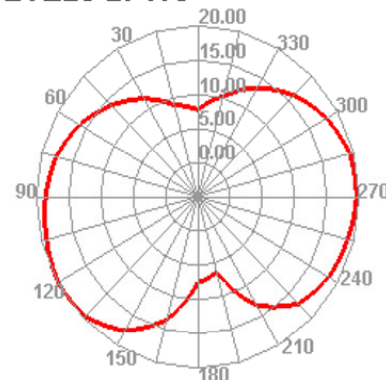
LTE28 27260



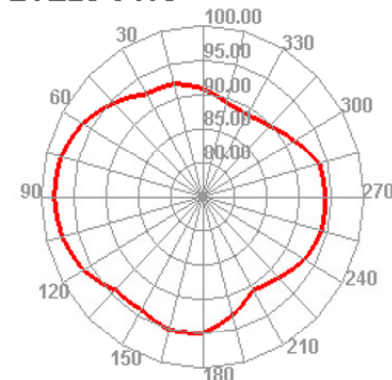
LTE28 27360



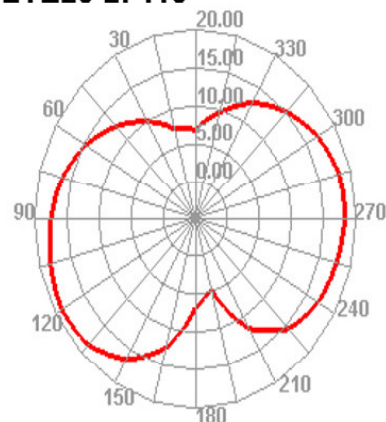
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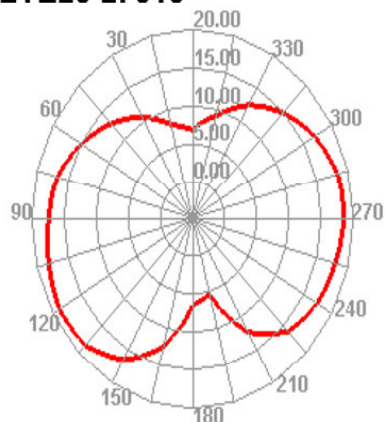
LTE28 9460



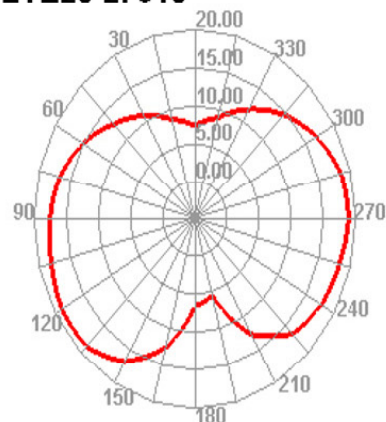
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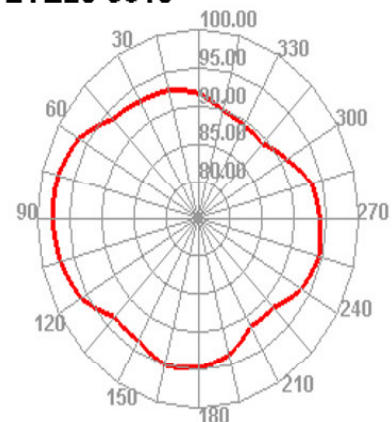
LTE28 27510



LTE28 27610



LTE28 9610



Thank you!



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South Taiyue Cloud Chuanggu, Guangming
Avenue, Guangming New District, Shenzhen**

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