Antenna Test Report

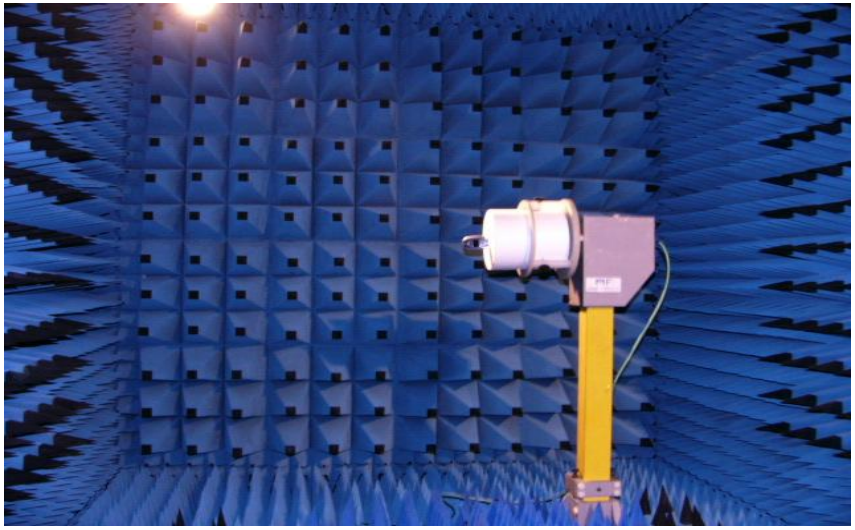
SHENZHEN KURUIJIE

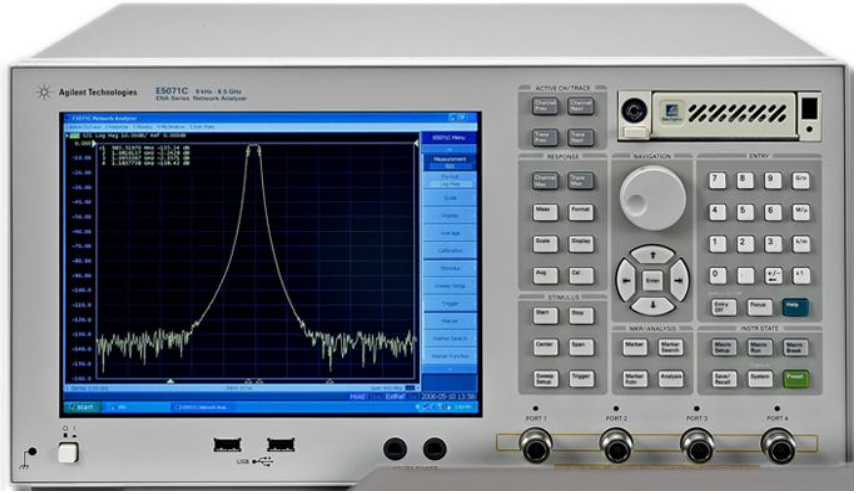
Customer:联代
Project: F2420-17A1

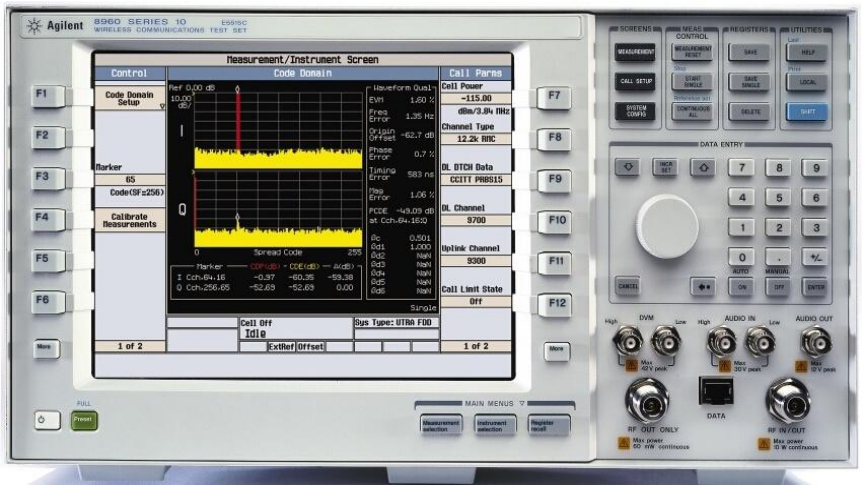
RF Engineer:资业辉
Testing Date:2023.10.26

1. The Equipment of Active Test

1: Anechoic Chamber 7x4x3 m (3D)
2: Rohde & Schwarz CMW500
3: AGILENT 8960 5515C
4: Network Analyzer-AGILENT ENA5071B







Shenzhen Kuruijie Communication Technologies Co.,Ltd

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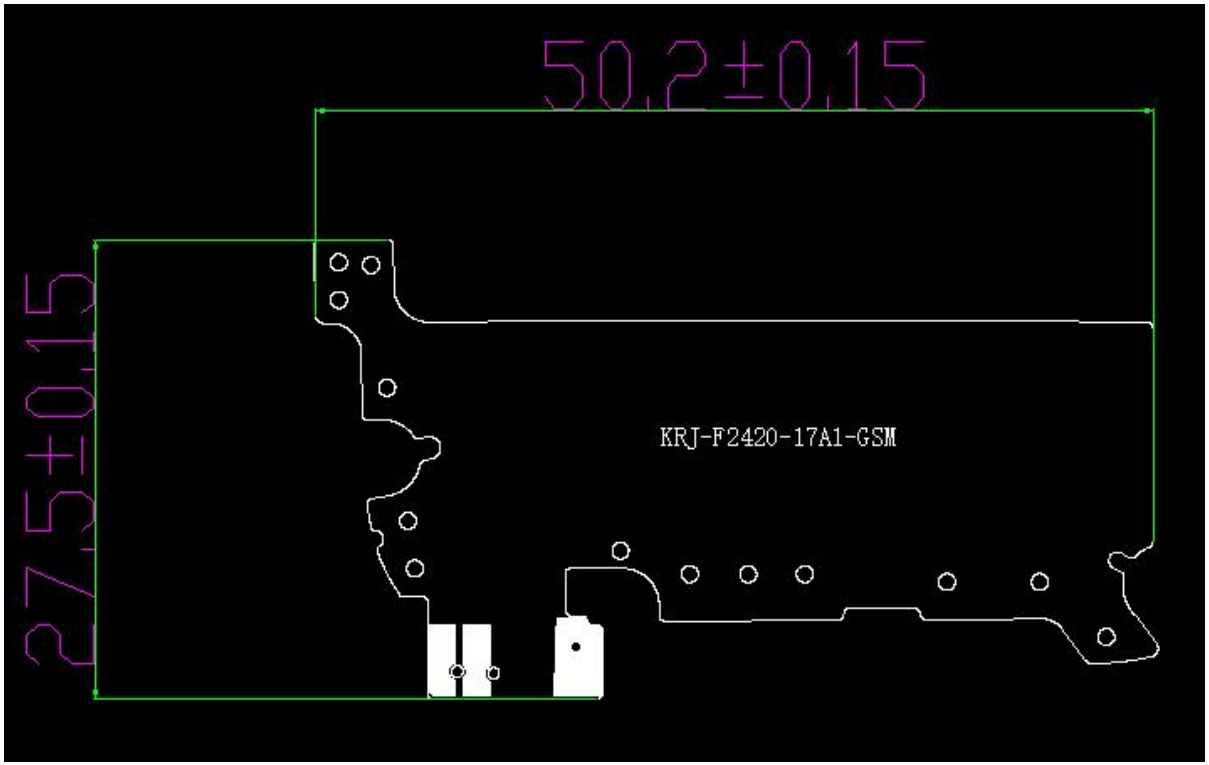
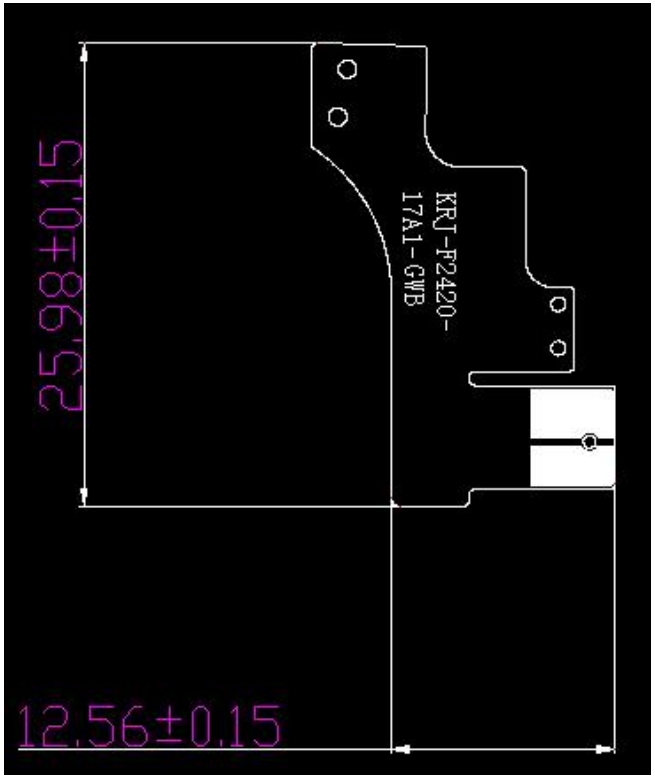
一、产品规格（Product specification）

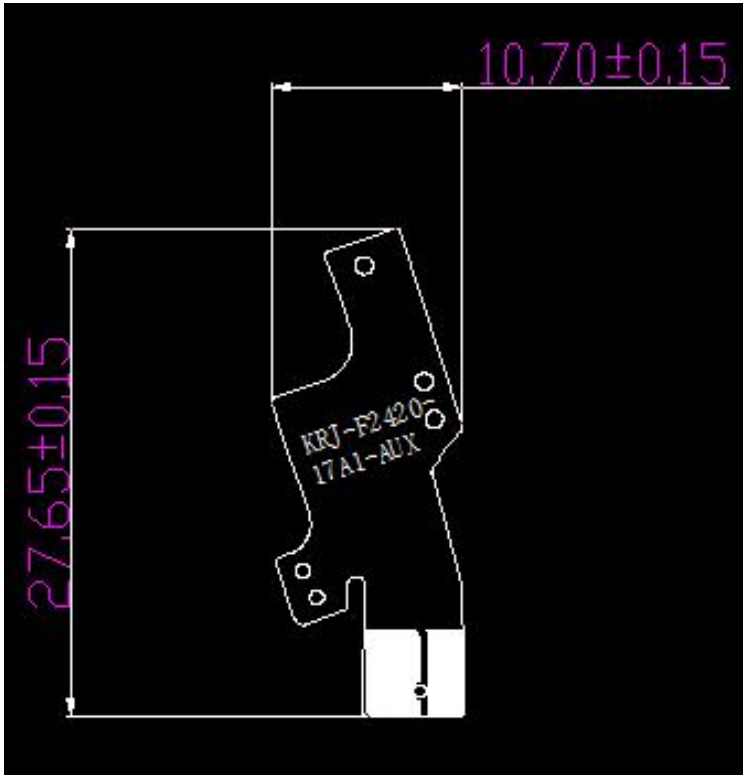
主天线(Main)



三合一天线(GWB)



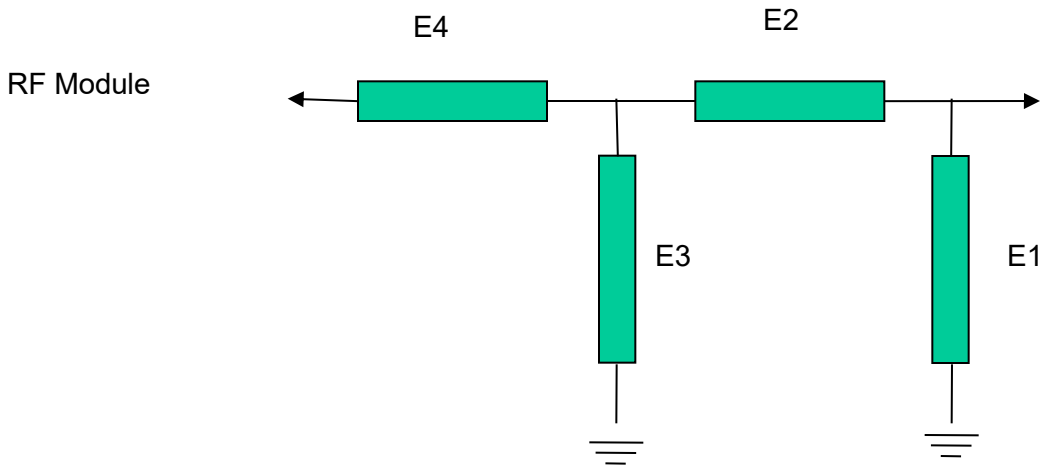
分集天线(AUX)



二、 Electrical performance

1.Specifications

The operating frequency band of F2420-17A1 antenna is 700~960MHZ and 1710~2700MHZ, in which resonance occurs.



Element	Value
E1(0201)	12NH(L0719)
E2(0201)	3.3PF(R0701)
E3(0201)	NC
E4(0201)	

	开关路径	匹配值	2G频率	3G频率	4G频率
开关匹配逻辑	RF1	0Ω	850/1800/1900	WCDMA=B2/4/5	4G=B2/3/4/5/7/8
	RF2	0Ω	900		
	RF3	4.3NH			4G=B12/28AB
	RF4				

三、Test of parameters

1.Test settings

The connection of VSWR test device is：

E5071Cnetwork analyzer→50Ohmic coaxial Cable→110mmLong copper tube→Test fixture

Treatment of test fixture:

Use a hard cable to lead out the SMA-J connector from the 50 ohm test point of the antenna on the mobile phone PCB, connect it to the copper tube with a choke, and then connect other devices in turn.

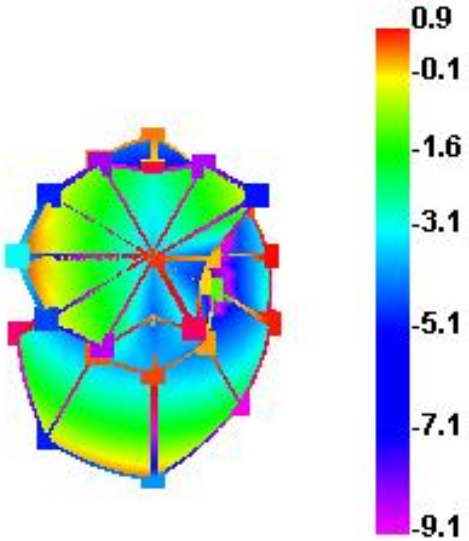
Structure of antenna： FPC

Passive parameters of main antenna：

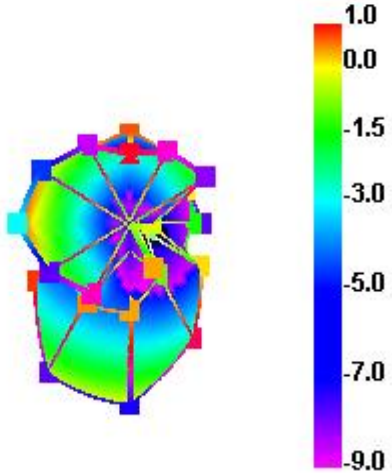
工作频段(**Working frequency band)**： 700~960MHZ，
1710~2700MHZ
GSM850/900/1800/1900
WCDMA:B2/B4/B5
LTE:B2/B3/B4/B5/B7/B8/B12/B28AB

频段Band	效率（Effi）	gain增益(dBi)
GSM900/B8	40.5%	0.5DBI
GSM850/WCDMA B5/LTE B5	40.3%	0.5DBI
DCS1800	42.3%	2.0DBI
PCS1900,WCDMA B2.LTE B2	43.1%	2.0DBI
LTE B3/B4/B66/W4	42.2%	2.0DBI
LTE B7	42.5%	2.1DBI
LTE B12/B28	36.4%	0.3DBI
GPS	45.6%	1.5DBI
2.4GWIFI/BT	46.3%	1.5DBI

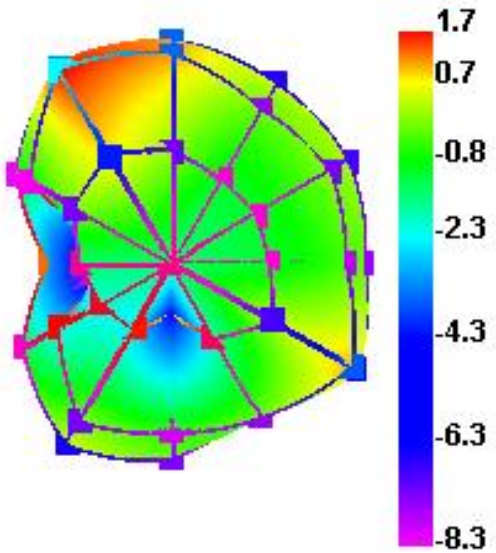
830.000MHz



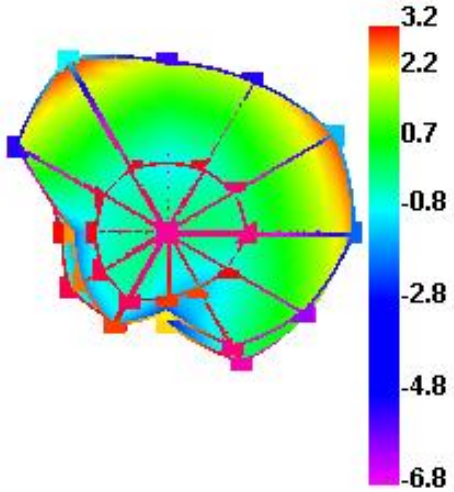
900.000MHz

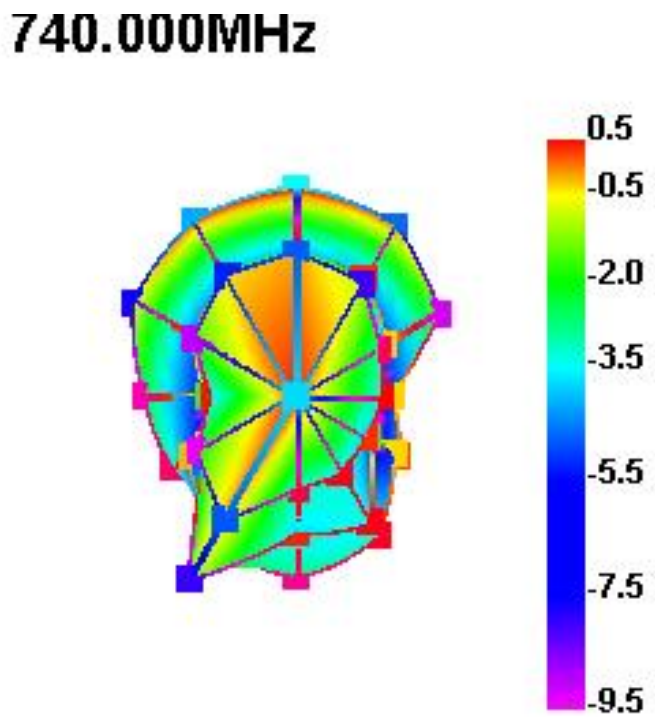


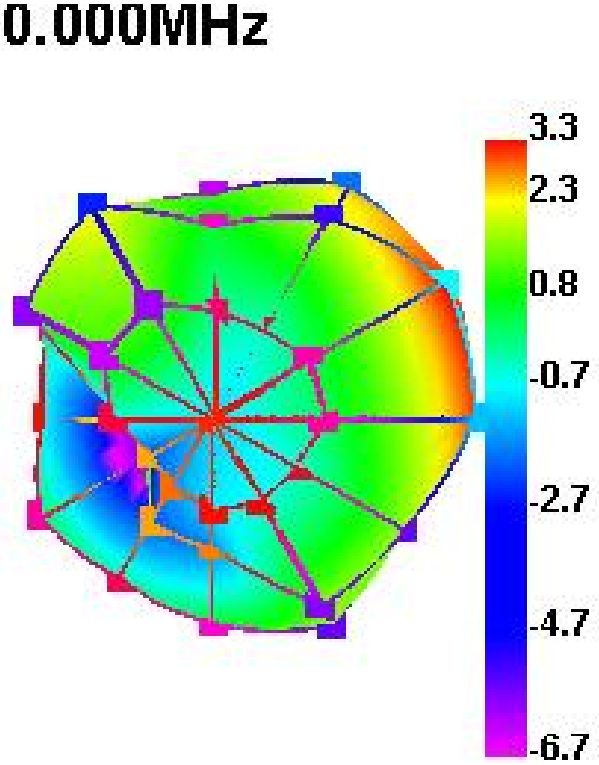
1710.000MHz



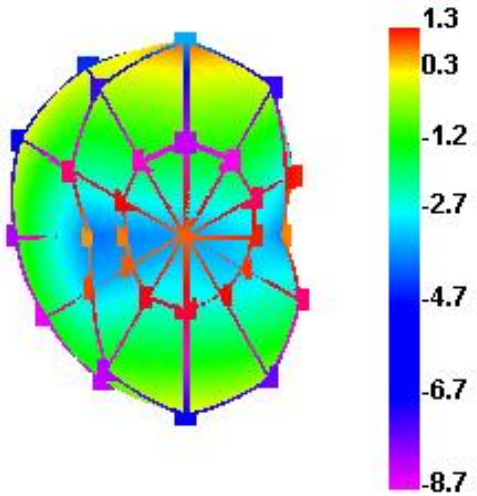
1880.000MHz



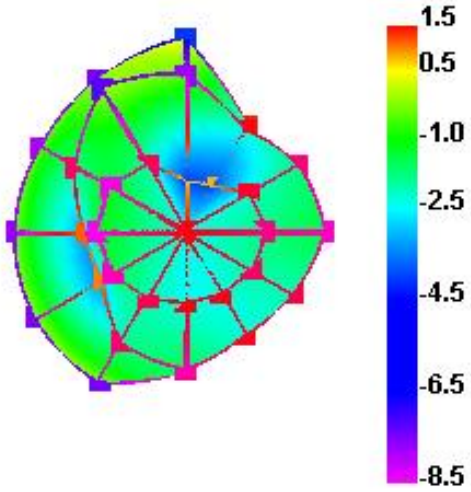

740.000MHz
0.5
-0.5
-2.0
-3.5
-5.5
-7.5
-9.5


2170.000MHz
3.3
2.3
0.8
-0.7
-2.7
-4.7
-6.7

1575.000MHz



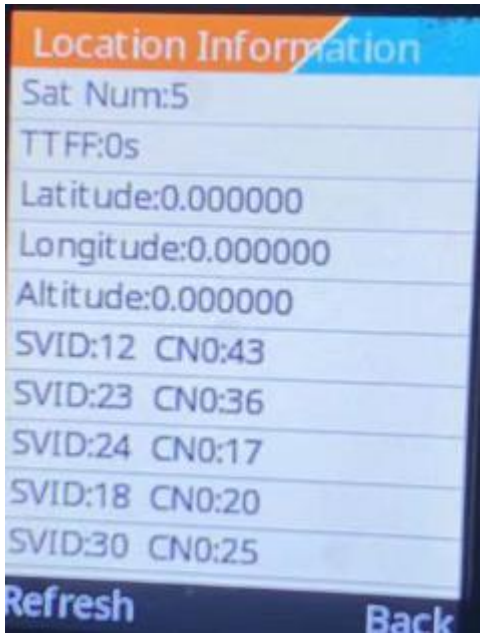
2450.000MHz



GPS/WIFI/BTPassive parameters of antenna：

工作频段(**Working frequency band**)： 1560~1580MHZ，2400~2500MHZ

2.test result



GPS实测报告	
位 置	测试结果
华强创意园5C室外	冷启动70秒定位，最大CN值43，可使用星数5颗以上.

	Wifi 2.4G b/11M		
	1	7	13
TRP	12.24	12.56	13.53
TIS	-81.21	-80.15	-81.36

BT实测报告	
位 置	测试结果
10米	范围内正向语音通话清晰

四、Active test setup

The active test devices are sequentially connected as follows：

Agilent8960→50Ohmic coaxialCable→guangping system→Mobile phone to be tested

1.Test site

AW microwave anechoic chamber: the test frequency range is 400MHz - 6GHz, the quiet zone range is 40cm circumference, and the reflectivity is less than - 90 dB.

2.test result

The maximum radiation power and maximum receiving sensitivity reflect the maximum power radiation value and the optimal receiving performance of the antenna in the entire radiation space. TRP and TIS reflect the average radiation power and average receiving sensitivity of the antenna, that is, the overall receiving performance of the antenna.

The following is the active test result of F2420-D1 mobile phone main antenna：

2G	CH	TRP	TIS
GSM850	128	27.07	
	251	27.8	-102.74
EGSM900	1	27.97	
	124	27.55	-102.17
DCS1800	512	24.12	
	885	25.56	-103.41
PCS1900	512	25.16	
	810	25.22	-103.16
3G	CH	TRP	TIS
W2	9262	18.3	
	9538	18.41	-104.68
W4	1312	17.8	
	1513	18.23	-103.03
W5	4132	18.82	
	4233	18.11	-103.15

4G	CH	TRP	TIS
FDD-B2	20000	18.19	
	20350	18.98	-91.12
FDD-B3	19250	17.14	
	19900	17.66	-89.29
FDD-B4	20000	18.08	
	20350	18.04	-91.15
FDD-B5	20450	18.59	
	20600	18.66	-91.53
FDD-B7	20800	18.16	
	21400	17.68	-90.8
FDD-B8	21500	18.57	
	21750	18.63	-91.41
FDD-B12	23060	15.43	
	23130	16.46	-90.06
FDD-B28AB	27260	16.35	
	27410	17.5	
	27610	18.24	-90.32

五、环境处理(Environmental treatment)

主板上贴导电海绵与屏接地

屏上贴导电布与主板接地