

# ANWEI commnuication Equipment Co.,Ltd

## APPROVAL SHEET

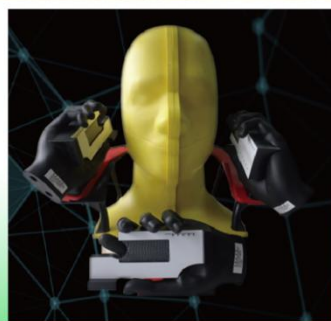
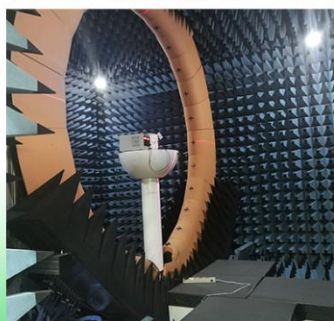
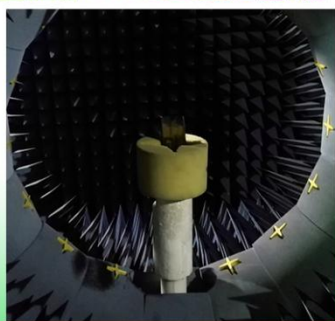
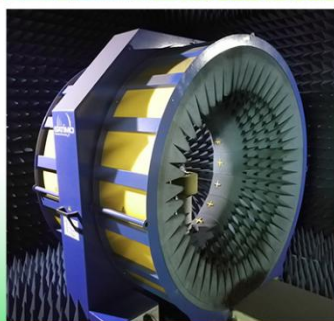
Customer	Youmi	Specs	A15 Pro 4G
Part Number	A15 pro 4G-MAIN-AW-V0.3 A15 pro 4G-DIV-AW-V0.3 A15 pro 4G-GWB-AW-V0.3 A15 pro 4G-5GWIFI-AW-V0.3 A15ULTRA-AW-V1.0	Frequency Band	2G:GSM850/900/1800/1900/BCO/BC1 3G:WCDMA-B1/2/4/5/6/8/19 4G:LTE-B1/2/3/4/5/7/8/12/13/17/18/19/20/25/26/28A/28B/34/38/39/40/41/66/71
Color	Black	Edition	REV:A0
Salesperson	Mr.Xie	Design	ZHONG ZHI HUI
Structure	QIN YUN LIN	Confirm	
Date	2023/11/21	Signing Date	

Customer confirmation:

ANT Manufacturers: ANWEI commnuication Equipment Co.,Ltd

Address:2nd Floor, East Block, Building 5, Yifenghua Innovation Industrial Park, Huaning Road, Dalang Street, Longhua District, Shenzhen City, Guangdong Province

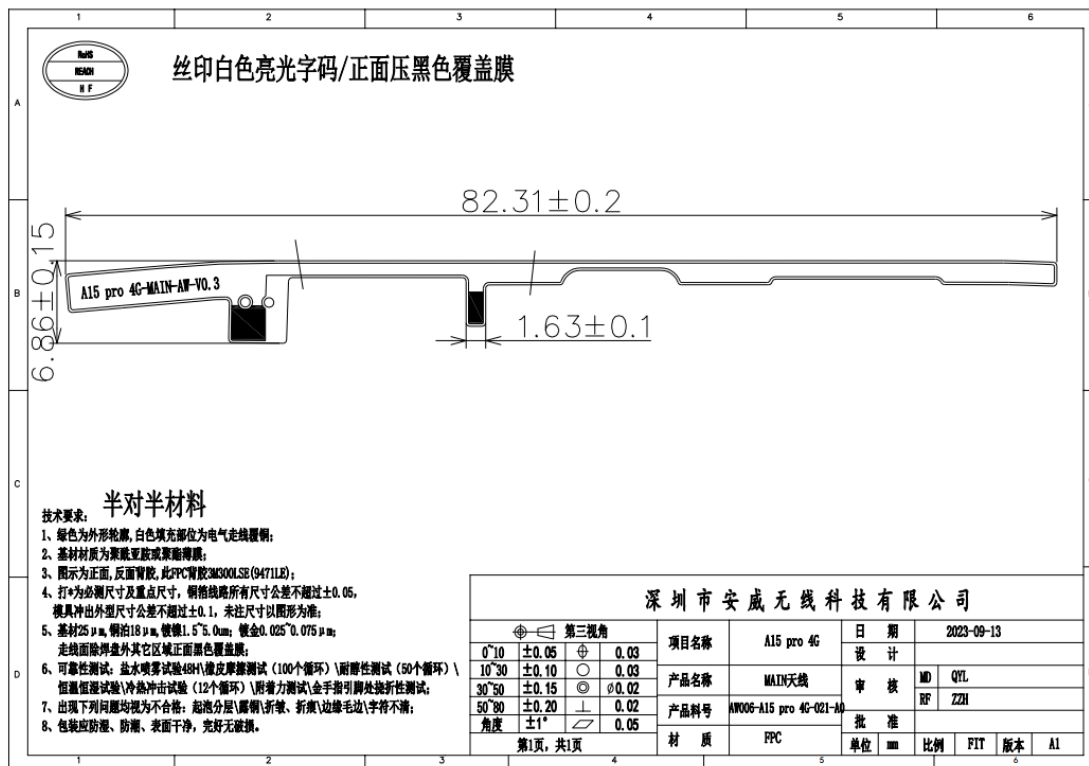
## Project development environment



安威无线一直都是您值得信赖且优秀的合作伙伴，我们为您提供全方位一站式的的产品以及技术服务！

“质量第一，服务至上”是安威一直以来的发展宗旨

## MAIN ANT



(Working frequency band): 600MHZ~960MHZ

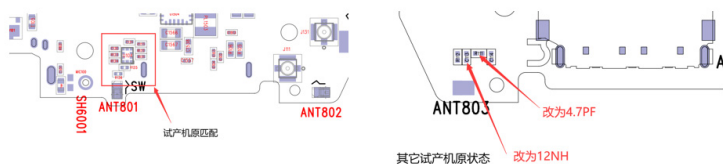
2G:GSM850/900/BCO

3G:WCDMA-B5/6/8/19

4G:LTE-B5/8/12/13/17/18/19/20/26/28A/28B/71

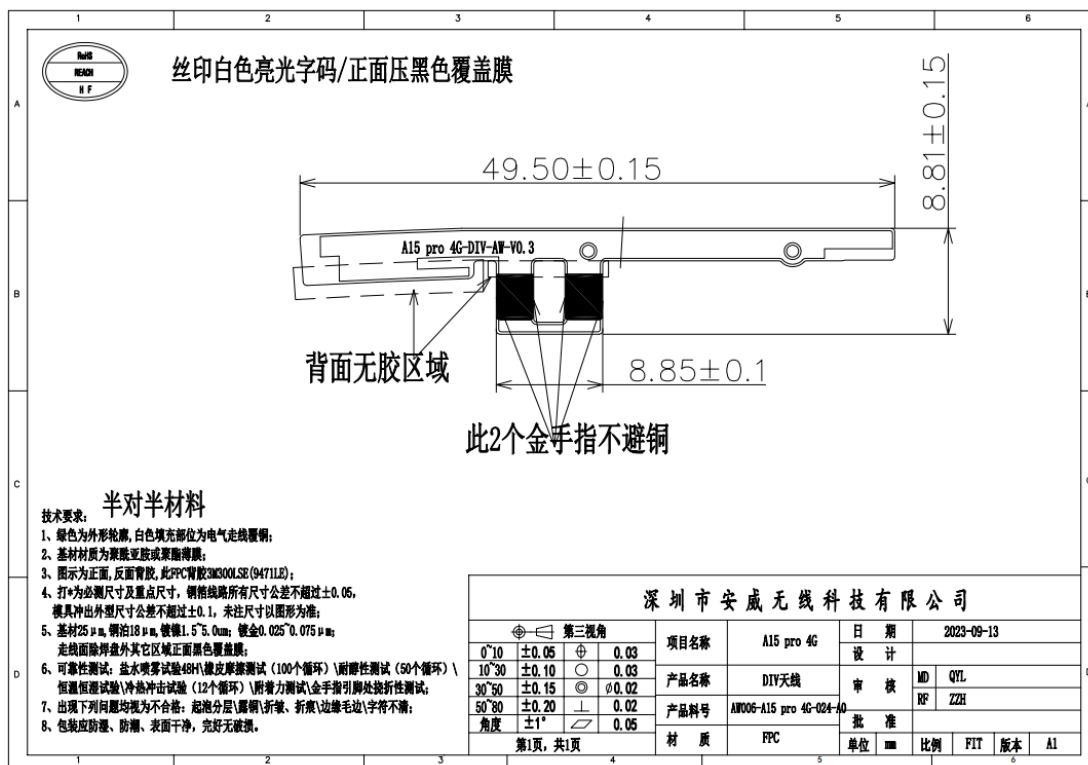
(Matcheing network):

### ANTO小板匹配电路



Element	Value
E1 (R112)	0 Ω
E2 (C113)	12NH
E3 (R111)	4.7PF
E4 (C114)	N/A

## DIV ANT



(Working frequency band):1710~2690MHZ

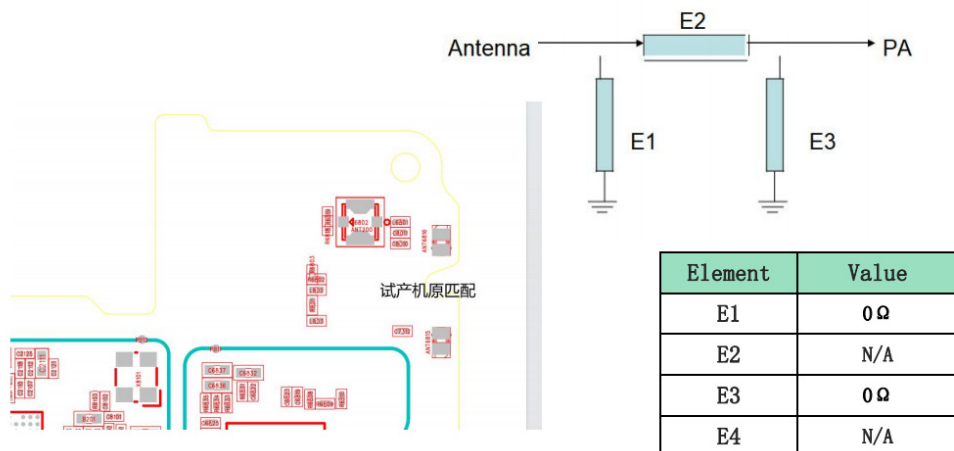
2G:GSM1800/1900/BC1

3G:WCDMA-B1/2/4

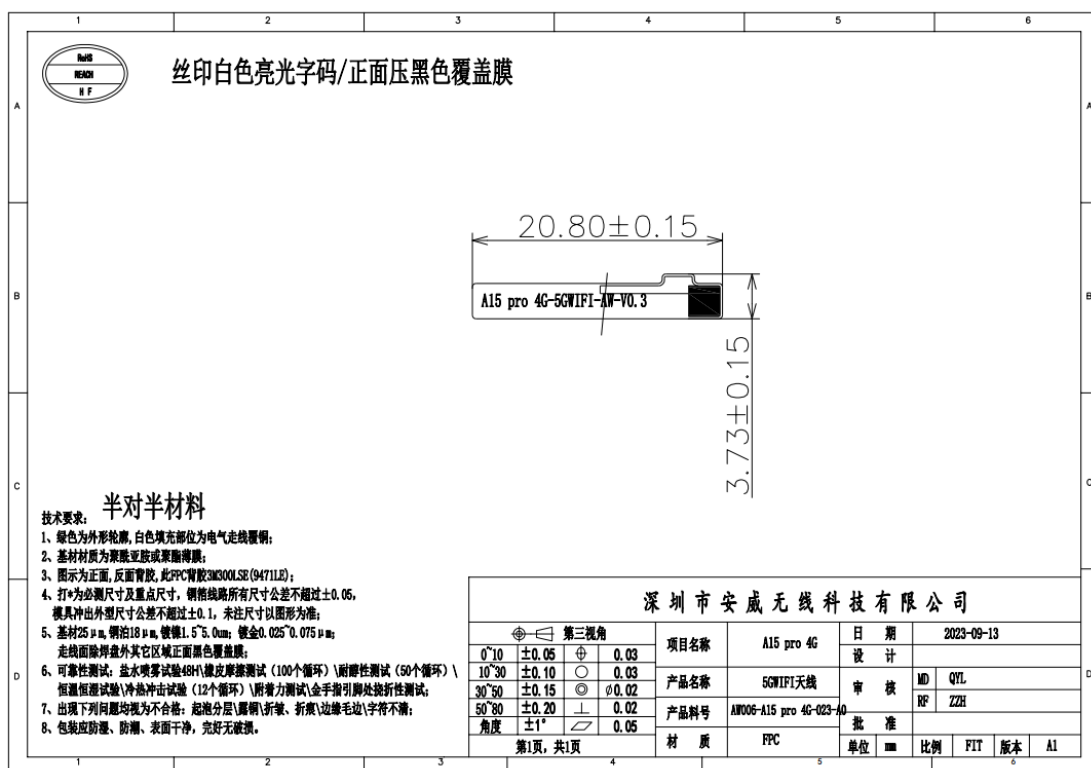
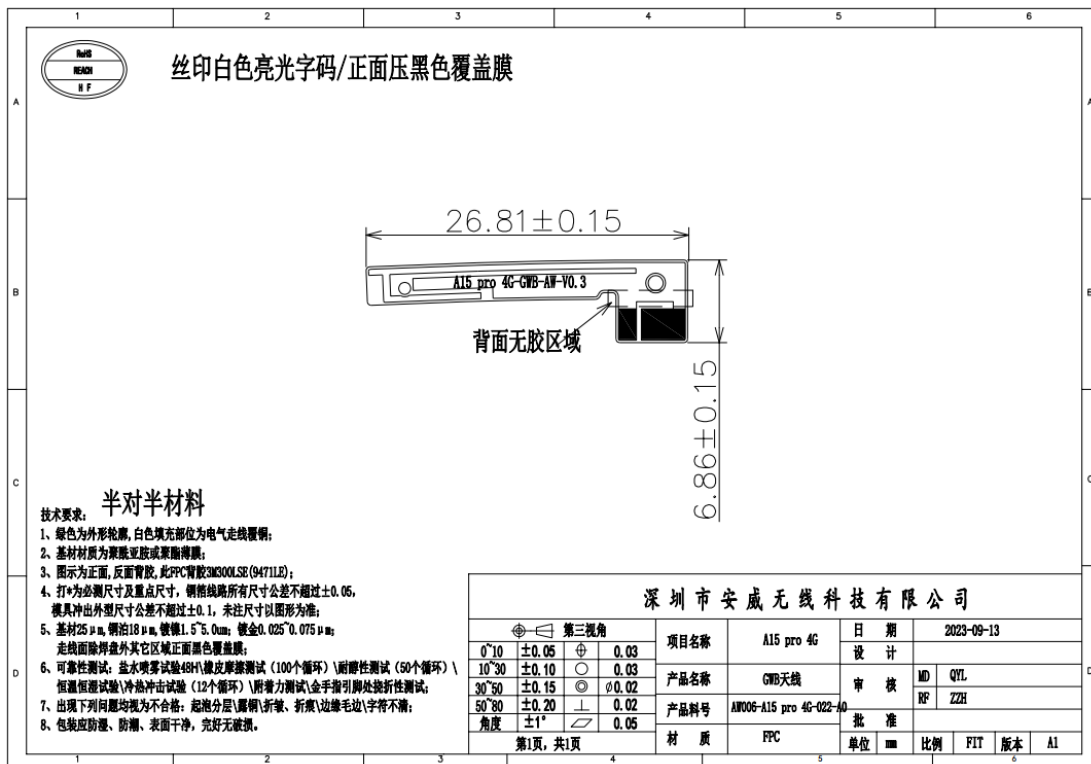
4G:LTE-B1/2/3/4/7/25/34/38/39/40/4166

(Matcheing network):

## 分集天线匹配电路



(GPS L1 antenna) + (2.4G/5G WIFI/BT antenna)

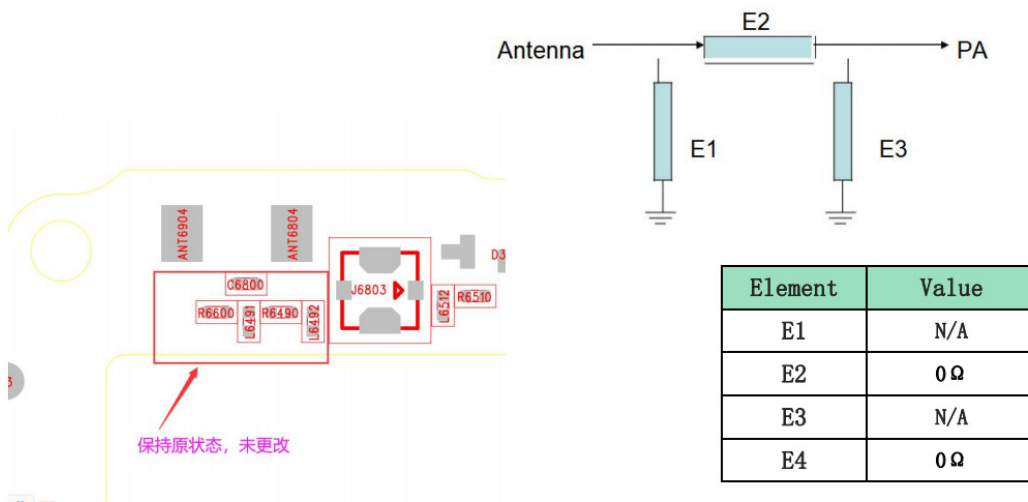


(Working frequency band of GPS antenna) : 1575.42MHZ

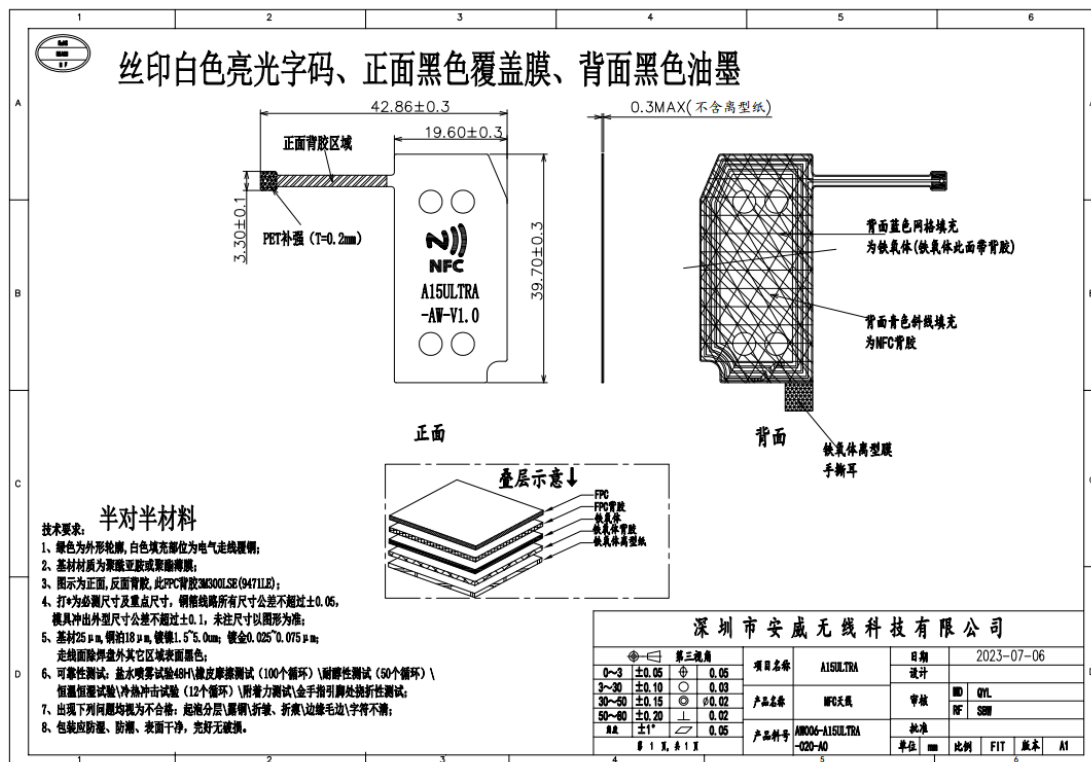
(Working frequency band of 5GWIFI antenna) : 2400~2500,5150MHZ~5850MHZ

## (Matching network)

## GPS/WIFI/BT天线匹配电路



## (NFC antenna)



**ANWEI ANT TRP&TIS parameter Summary of A15 Pro 4G**

BAND	Channel	TRP (dBm)	TIS (dBm)
FDD B1	L	14.53	
	M	15.26	
	H	16.59	-89.89
FDD B2	L	14.04	
	M	14.61	
	H	15.21	-89.62
FDD B3	L	16.86	
	M	17.06	
	H	16.17	-90.37
FDD B4	L	15.83	
	M	15.61	
	H	15.72	-92.71
FDD B5	L	16.42	
	M	17.28	
	H	17.53	-90.35
FDD B7	L	16.98	
	M	16.73	
	H	15.80	-90.67
FDD B8	L	15.49	
	M	16.25	
	H	15.62	-90.21
FDD B12	L	14.81	
	M	15.45	
	H	15.74	-91.94
FDD B13	L		
	M	14.27	-91.86
	H		



FDD B17	L	16.27	
	M	16.34	
	H	16.43	-90.74
FDD B18	L	14.76	
	M	16.29	
	H	16.60	-89.00
FDD B19	L	15.97	
	M	16.97	
	H	17.14	-90.21
FDD B20	L	14.59	
	M	15.38	
	H	15.11	-90.80
FDD B25	L	14.46	
	M	15.16	
	H	15.80	-90.03
FDD B26	L	14.74	
	M	16.10	
	H	16.72	-89.23
FDD B28A	L	16.11	
	M	16.59	
	H	16.53	-91.25
FDD B28B	L	16.92	
	M	16.80	
	H	17.07	-88.39
FDD B66	L	14.63	
	M	14.04	
	H	14.00	-92.25



FDD B71	L	13.28	
	M	13.46	
	H	13.65	-91.35
TDD B34	L	17.16	
	M	17.36	
	H	17.04	-90.64
TDD B38	L	16.22	
	M	16.20	
	H	15.81	-88.21
TDD B39	L	14.57	
	M	14.41	
	H	14.78	-89.08
TDD B40	L	16.09	
	M	16.89	
	H	17.06	-89.83
TDD B41			
	M	15.53	-89.07
	H		
WCDMA-B1	L	13.22	
	M	16.44	
	H	16.49	-100.71
WCDMA-B2	L	14.65	
	M	14.64	
	H	15.15	-102.70
WCDMA-B4	L	16.23	
	M	16.26	
	H	16.38	-102.93
WCDMA-B5	L	15.96	
	M	16.48	
	H	16.95	-103.65

WCDMA-B6	L	16.19	
	M	16.40	
	H	16.37	-102.78
WCDMA-B8	L	16.99	
	M	17.62	
	H	16.88	-102.88
WCDMA-B19	L	16.43	
	M	16.58	
	H	16.95	-101.36
BCO	L	16.06	
	M	16.17	
	H	16.20	-99.41
BC1	L	9.83	
	M	11.99	
	H	13.21	-99.13

	Channel	TRP (dBm)	TIS (dBm)
GSM850	L	26.09	
	M	26.12	
	H	25.70	-102.02
GSM900	L	25.80	
	M	25.76	
	H	25.96	-100.73
DCS1800	L	23.87	
	M	22.72	
	H	23.94	-101.08
PCS1900	L	22.16	
	M	22.34	
	H	22.09	-102.59

2.4G WIFI	L	12.27	-81.26
	M	11.32	-80.24
	H	11.72	-81.16
B mode 11M			
5 G WIFI	L	8.64	-71.41
	M	7.06	-70.57
	H	8.42	-71.27
A mode 54M			

## (GPS Test)

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SVID	Fq	CNR	Elevation	Azimuth	SVID	Fq	CNR	Elevation	Azimuth
	3	L1	<div>32.9</div>	26.00 261.00		5	L1	0.0	24.00 255.00
	4	L1	<div>30.2</div>	31.00 321.00		6	L1	<div>36.3</div>	61.00 10.00
	16	L1	<div>41.5</div>	67.00 306.00		7	L1	<div>26.0</div>	67.00 205.00
	26	L1	<div>30.4</div>	56.00 9.00		8	L1	0.0	6.00 197.00
	27	L1	<div>26.2</div>	44.00 175.00		9	L1	<div>34.1</div>	52.00 344.00
	28	L1	<div>41.5</div>	34.00 72.00		10	L1	<div>31.7</div>	52.00 213.00
	29	L1	0.0	5.00 38.00		16	L1	<div>43.1</div>	62.00 26.00
	31	L1	<div>30.3</div>	47.00 43.00		20	L1	<div>37.6</div>	52.00 256.00
	32	L1	<div>27.0</div>	0.00 0.00		23	L1	<div>20.0</div>	11.00 66.00
	65	L1	<div>38.5</div>	56.00 207.00		27	L1	<div>25.1</div>	28.00 153.00
	66	L1	<div>22.5</div>	48.00 310.00		28	L1	<div>20.0</div>	32.00 97.00
	75	L1	<div>31.4</div>	21.00 34.00		30	L1	0.0	1.00 194.00
	76	L1	<div>19.9</div>	41.00 330.00		37	L1	<div>27.1</div>	46.00 21.00
	84	L1	<div>27.1</div>	0.00 0.00		4	L1	<div>37.9</div>	85.00 214.00
	85	L1	<div>20.3</div>	18.00 74.00		24	L1	<div>17.5</div>	20.00 247.00
						26	L1	0.0	3.00 91.00

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G:GPS R:GLN B:BD E:GAL Q:QZS L:LTS I:IRNSS S:SBAS

Average CNR

G:33.6/+/+/- R:30.6/+/+/- B:31.5/+/+/- E:31.0/+/+/-

Q:41.0/+/+/- L:+/+/- I:+/+/- S:26.0/+/+/-

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SVID	Fq	CNR	Elevation	Azimuth
	32	L1	0.0	19.00 146.00
	65	L1	<div>24.2</div>	55.00 206.00
	66	L1	<div>40.6</div>	48.00 309.00
	75	L1	<div>32.0</div>	20.00 36.00
	76	L1	<div>29.5</div>	41.00 332.00
	77	L1	<div>27.7</div>	20.00 281.00
	85	L1	<div>29.7</div>	19.00 71.00
	86	L1	0.0	19.00 121.00
	1	L1	0.0	46.00 125.00
	2	L1	0.0	47.00 236.00
	3	L1	<div>27.7</div>	62.00 189.00
	4	L1	0.0	32.00 112.00
	5	L1	0.0	24.00 255.00
	6	L1	<div>37.9</div>	61.00 10.00
	7	L1	0.0	67.00 205.00
	8	L1	0.0	6.00 197.00

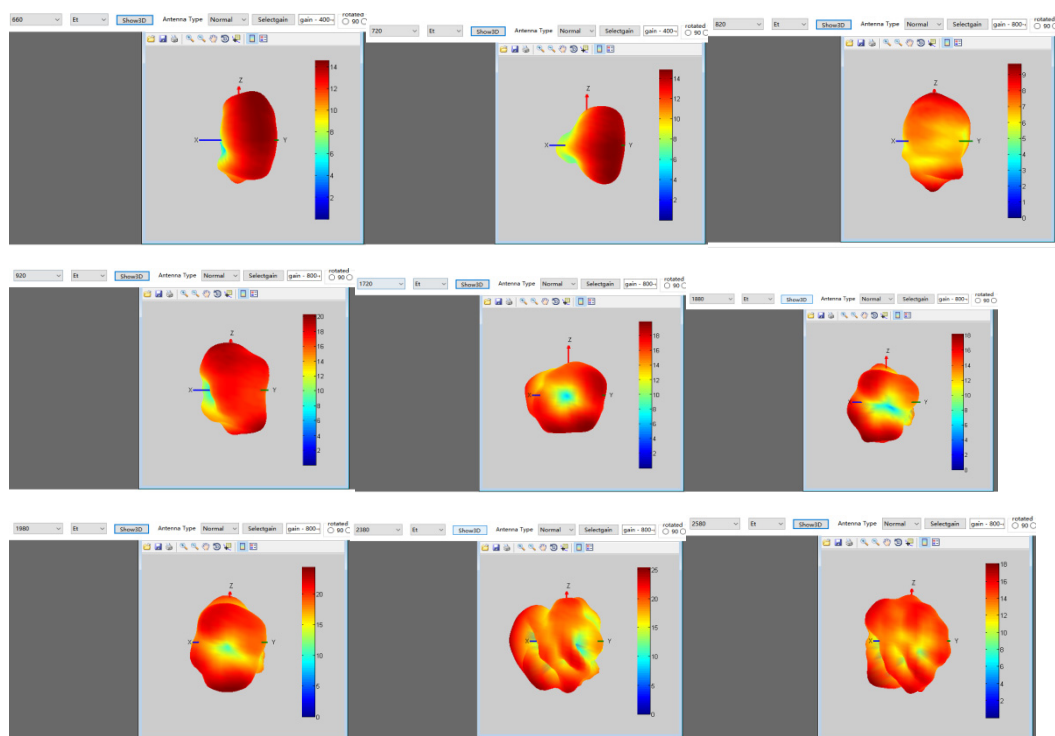
(Efficiency of GPS antenna): 30.41%

## 天线增益(Antenna gain)

Standard	Band	Frequency	Gain(dbi)
TDD_LTE	TDD_B34	1980	1.76
TDD_LTE	TDD_B38	2580	-0.54
TDD_LTE	TDD_B39	1880	0.76
TDD_LTE	TDD_B40	2380	-2.41
TDD_LTE	TDD_B41	2580	-0.54
FDD_LTE	FDD_B1	1980	1.76
FDD_LTE	FDD_B2	1880	0.76
FDD_LTE	FDD_B3	1720	-0.13
FDD_LTE	FDD_B4	1720	-0.13
FDD_LTE	FDD_B5	820	-4.65
FDD_LTE	FDD_B7	2580	-0.54
FDD_LTE	FDD_B8	920	-2.07
FDD_LTE	FDD_B12	720	-6.53
FDD_LTE	FDD_B13	780	-4.97
FDD_LTE	FDD_B17	720	-6.53
FDD_LTE	FDD_B18	820	-4.65
FDD_LTE	FDD_B19	820	-4.65
FDD_LTE	FDD_B20	820	-4.65
FDD_LTE	FDD_B25	1880	0.76
FDD_LTE	FDD_B26	820	-4.65
FDD_LTE	FDD_B28	720	-6.53
FDD_LTE	FDD_B4	1720	-0.13
FDD_LTE	FDD_B71	660	-5.41
WCDMA	WCDMA_B1	1980	1.76
WCDMA	WCDMA_B2	1880	0.76
WCDMA	WCDMA_B4	1720	-0.13
WCDMA	WCDMA_B5	820	-4.65
WCDMA	WCDMA_B6	820	-4.65
WCDMA	WCDMA_B8	920	-2.07
WCDMA	WCDMA_B19	820	-4.65

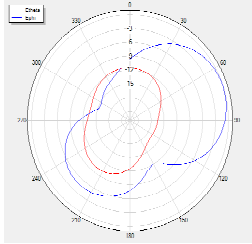
GSM	GSM850	820	-4.65
GSM	GSM900	920	-2.07
GSM	DCS1800	1720	-0.13
GSM	PCS1900	1880	0.76
BC0	850	820	-4.65
BC1	1900	1880	0.76
2.4GWIFI		2450	0.81
5GWIFI		5800	-1.74
GPS	L1	1575	0.23
BT		2450	0.81
NFC		13.56	1.5
FM		108	0.8

## MIMO antenna apple map

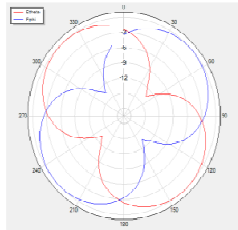


## (MIMO antenna) PolarGraphs/EtotalGraphs

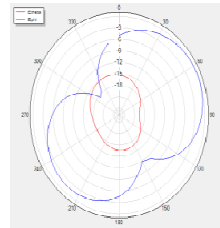
H Theta=90 freq=660MHz



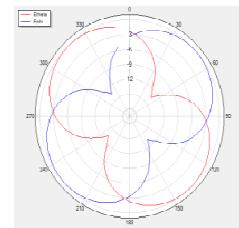
H Theta=0 freq=660MHz



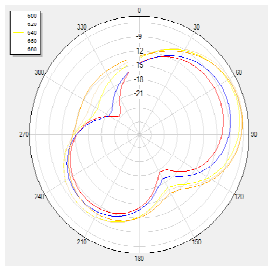
H Theta=90 freq=660MHz



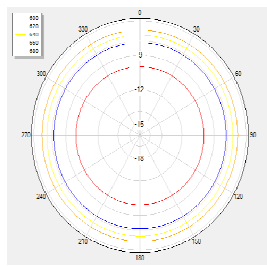
H Theta=0 freq=660MHz



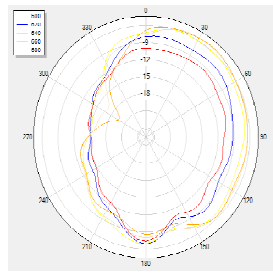
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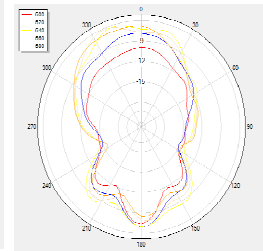
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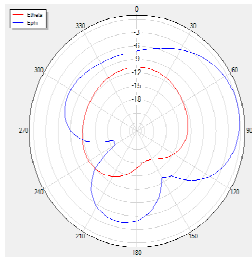
V Phi=90



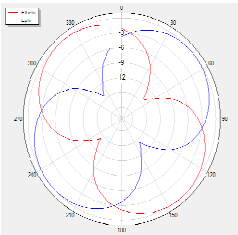
V Phi=0



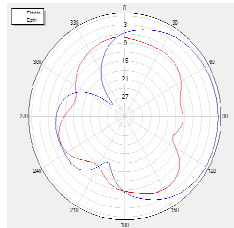
H Theta=90 freq=720MHz



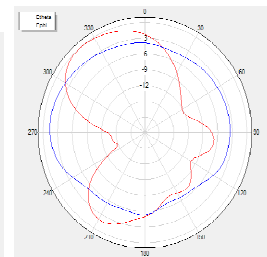
H Theta=0 freq=720MHz



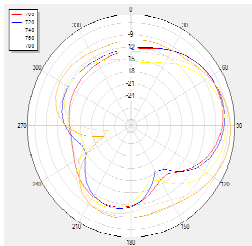
V Phi=90 freq=720MHz



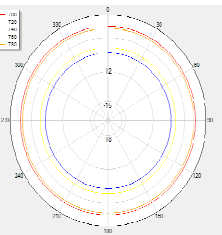
V Phi=0 freq=720MHz



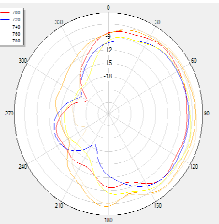
H Theta=90



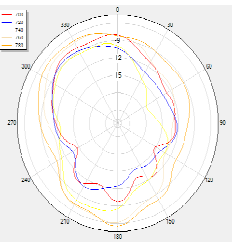
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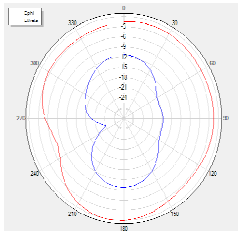
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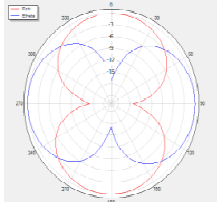
V Phi=0



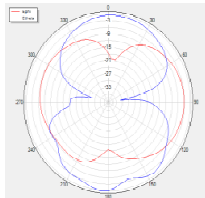
H Theta=90 freq=820MHz



H Theta=0 freq=820MHz



V Phi=90 freq=820MHz



V Phi=0 freq=820MHz

