

Date : 2024-0415

# Bopai Intelligent M6511-4G antenna test report

Project	Head of RF	Head of structure	Band
M6511	LIXIN	CENGOGN	GSM:850/900/1800/1900 WCDMA: B2/B4/B5 LTE:/B2//B4/B5/B12/B17/ B25/B26/B41/B66/B71 WIFI/GPS/BT
备注:			

The company has reviewed and met the requirements of the applicable clauses of GB/T19001-2016/ISO9001:2015 quality management system standard

701, Building 212, Tairan Science and Technology Park, Tairan 4th Road, Futian District, Shenzhen. [www.tyant.com](http://www.tyant.com)

# 1. Test environment

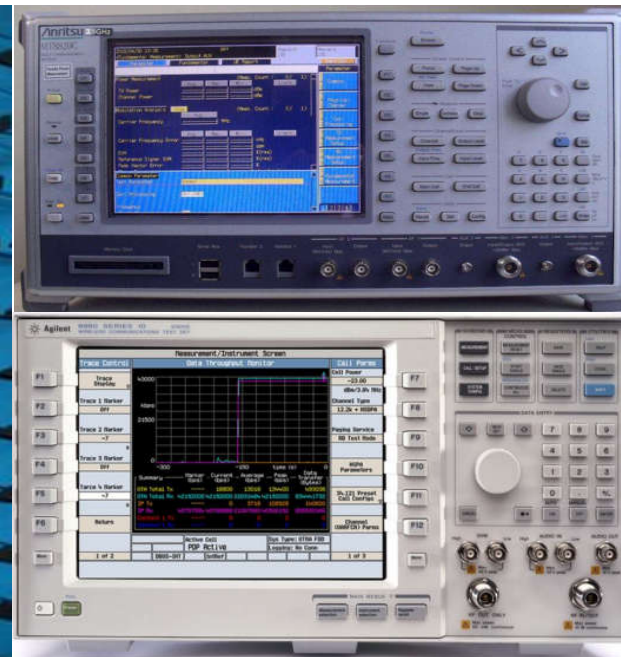
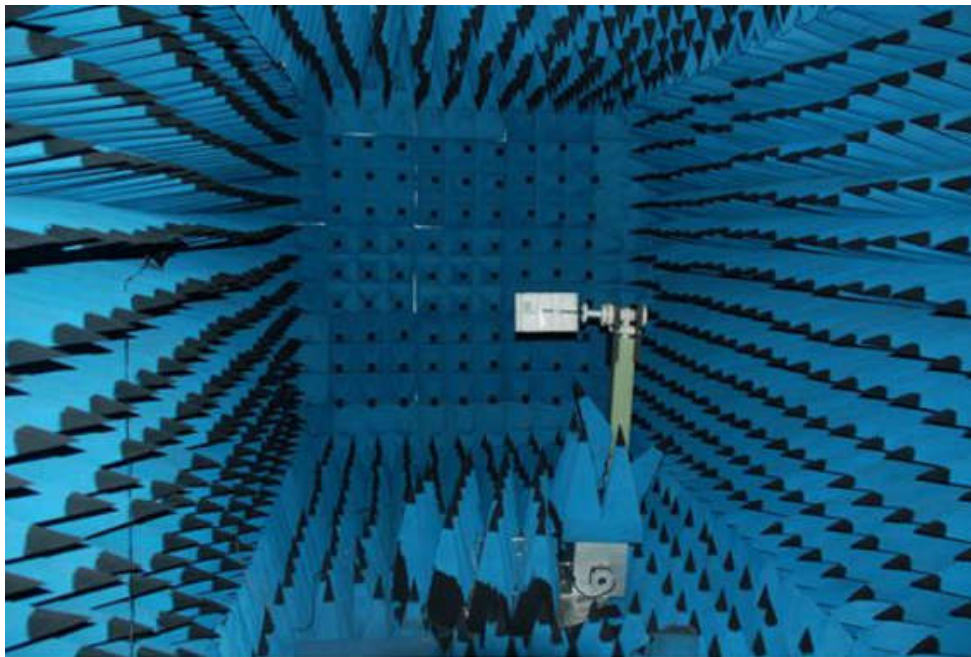
Test system: ETS 3D shielded anechoic chamber

Test environment: temperature  $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , humidity  $50\% \pm 15\%$

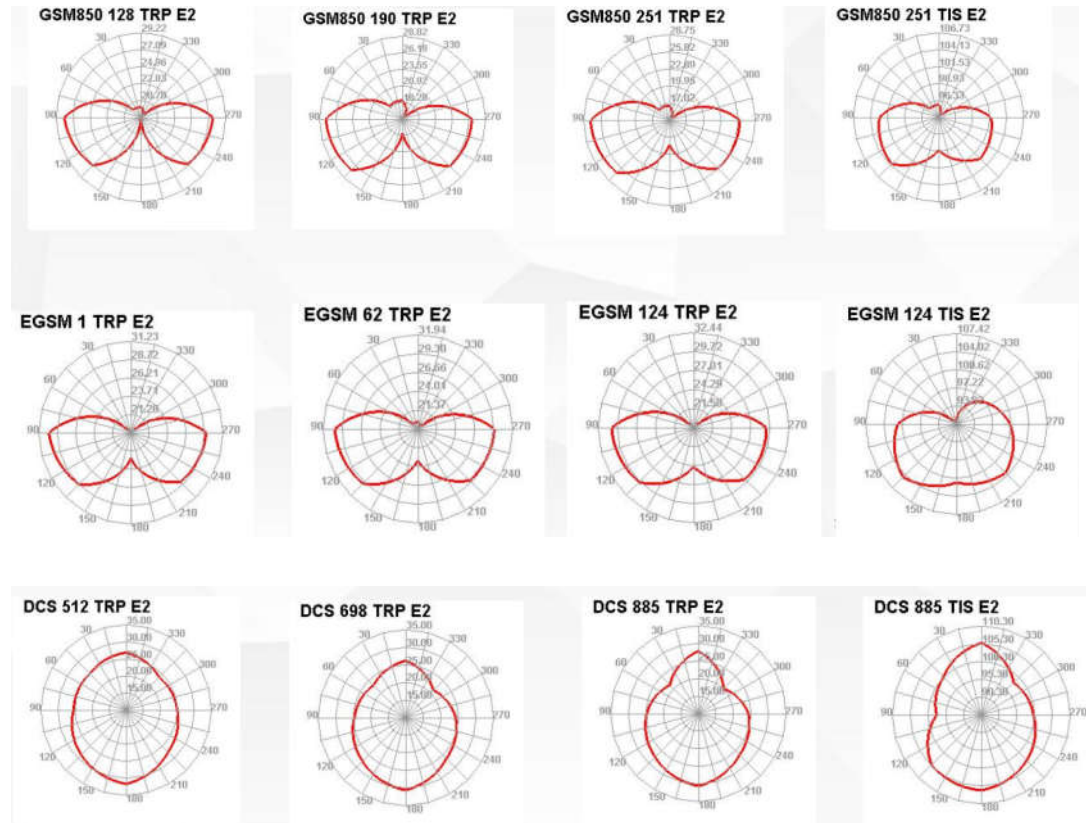
Test Equipment: Use the HP 8753E Network Analyzer when testing passive data

When testing the source data, use the E5515C-8960 3G full-featured comprehensive tester

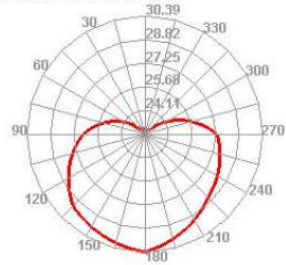
When testing the source data, use the 8820C 4G full-function comprehensive tester



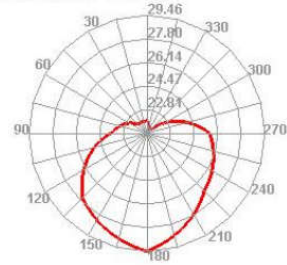
## 2D pattern



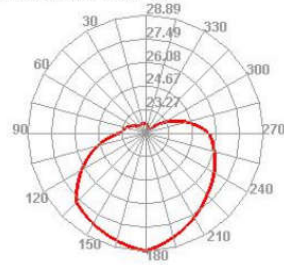
**PCS 512 TRP E2**



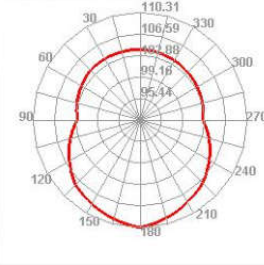
**PCS 661 TRP E2**



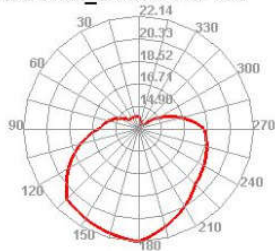
**PCS 810 TRP E2**



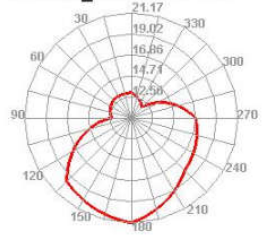
**PCS 810 TIS E2**



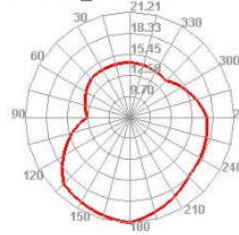
**WCDMA\_II 9262 TRP E2**



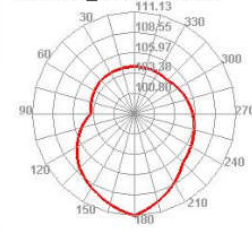
**WCDMA\_II 9400 TRP E2**



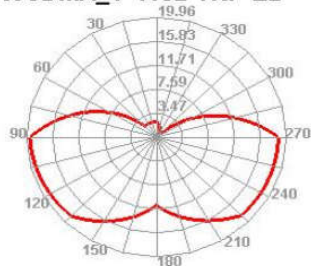
**WCDMA\_II 9538 TRP E2**



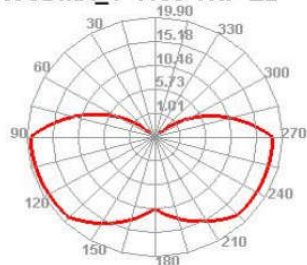
**WCDMA\_II 9938 TIS E2**



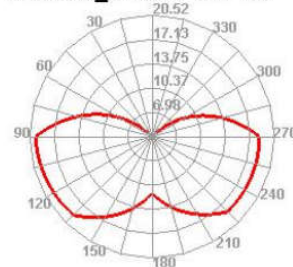
**WCDMA\_V 4132 TRP E2**



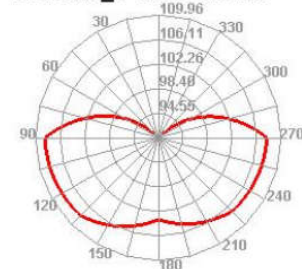
**WCDMA\_V 4185 TRP E2**



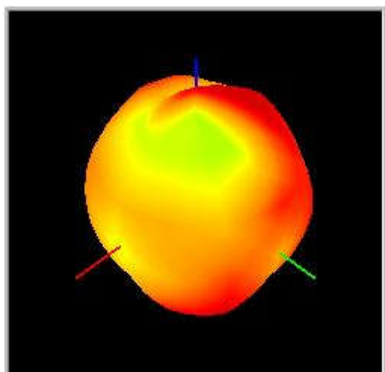
**WCDMA\_V 4233 TRP E2**



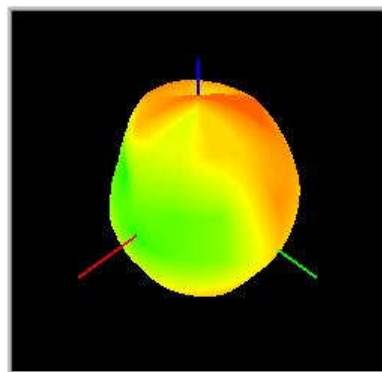
**WCDMA\_V 4458 TIS E2**



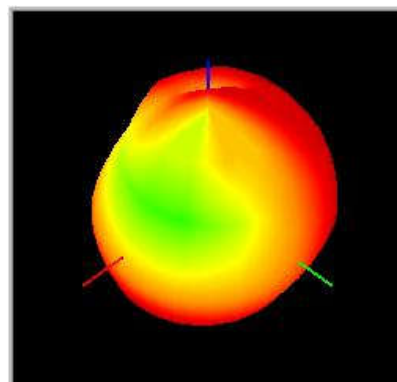
### 3.9 Antenna Pattern



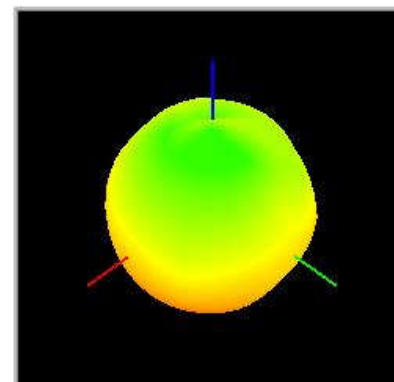
B2



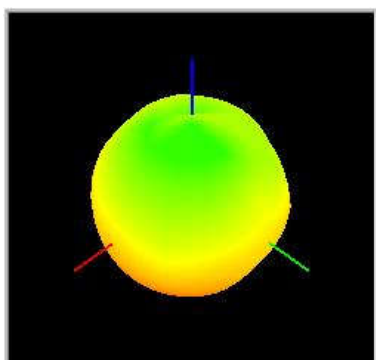
B4



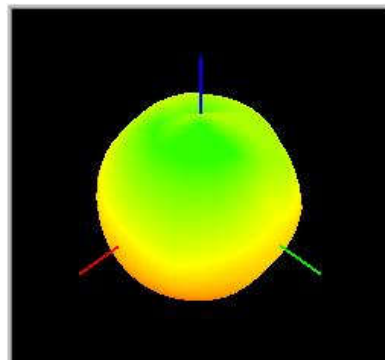
B5



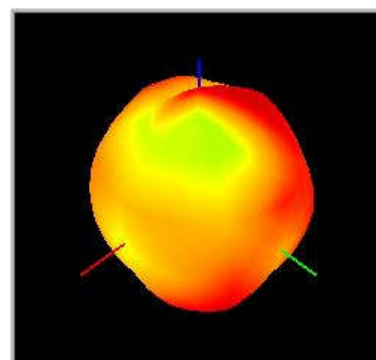
B12/17



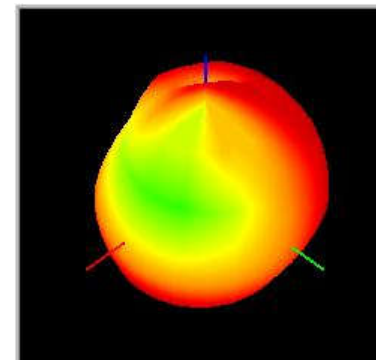
B13



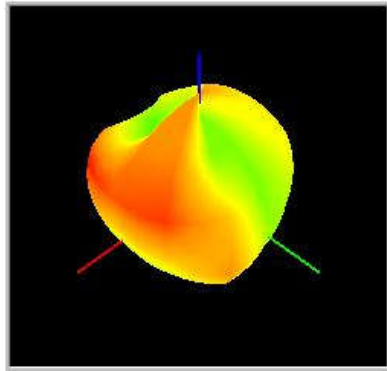
B17



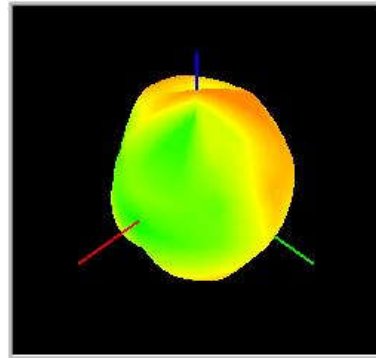
B25



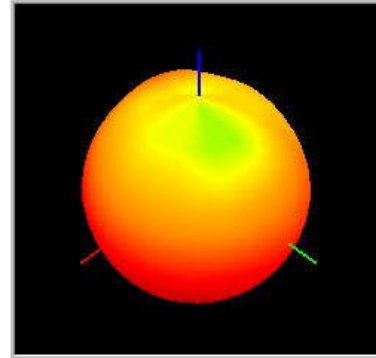
B26



B41



B66



B71

### 3.91 Antenna Gain

Band	GSM850	GSM900	DCS1800	PCS1900	
AVG Gain (dBi)	0.2	0.3	0.8	0.9	
Band	WCDMA850	WCDMA900	WCDMA1700	WCDMA1900	WIFI/BT
AVG Gain (dBi)	0.2		0.8	0.9	1.1
Band	LTE B2	LTE B4	LTE B5	LTE B12/17	LTE B13
AVG Gain (dBi)	0.9	0.8	0.8	-0.1	-0.1
Band	LTE B25	LTE B26	LTE B41	LTE B66	LTE B71
AVG Gain (dBi)	0.9	0.3	0.9	0.8	-0.3

## WiFi and BT antenna efficiency

Passive Test For WIFI2.4										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)	Attenut Hor	Attenut Ver
2400	34.31	-4.65	0.81	-1.34	15.415	18.89	0.81	-19.85	52.57	52.52
2410	35.16	-4.54	0.76	-1.39	14.929	20.234	0.76	-19.06	52.61	52.56
2420	31.03	-5.08	0.3	-1.85	12.193	18.832	0.3	-16.99	52.49	52.49
2430	33.49	-4.75	1.11	-1.04	12.234	21.258	1.11	-19.47	52.55	52.52
2440	35.25	-4.53	1.59	-0.56	12.305	22.941	1.59	-20.3	52.69	52.57
2450	33.57	-4.74	1.39	-0.76	11.846	21.727	1.39	-20.47	52.92	52.78
2460	33.52	-4.75	1.28	-0.87	12.482	21.039	1.28	-23.49	52.79	52.62
2470	29.95	-5.24	0.58	-1.57	11.921	18.024	0.58	-26.3	52.83	52.65
2480	34.69	-4.6	0.92	-1.23	14.699	19.988	0.92	-23.39	52.81	52.65
2490	35.98	-4.44	1.17	-0.98	15.883	20.098	1.17	-21.58	53	52.81
2500	38.93	-4.1	1.67	-0.48	17.436	21.492	1.67	-19.77	53.02	52.84

