

Antenna Design and Data Report

CUSTOMER: Guangdong Foshan Shunde Leishun
Technology Co.,LTD

PARTNO: TR3A

BAND: EMTC-B2/B4/B12+TB+WIFI

MANUFACTURER: Shenzhen Toppin Iot Technology Co.,
LTD

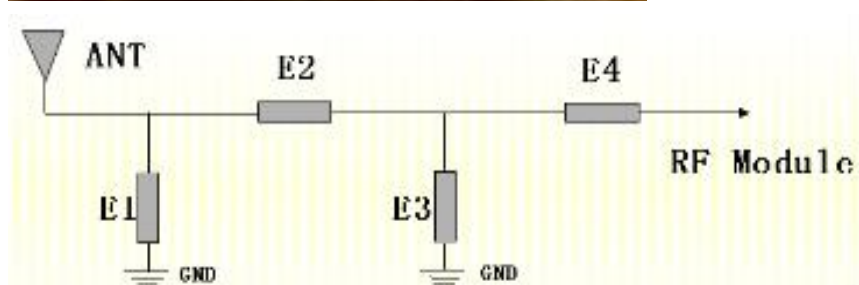
NAME: Jiale Lv

TIME: 2022.7.28

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1. Project appearance chart matching chart



Element	Value	Vender
E1(0201)	--	--
E2(0201)	--	--
E3(0201)	--	--
E4(0201)	--	--

NOTE:Mainboard matching is unchanged



2. Antenna test data

Antenna Performance Table						
Band		Channel No.	TX	TRP	RX	TIS
EMTC	B2	L	17.62	14.25		
		M	17.83	14.35		
		H	18.05	14.65	-94.02	-89.25
	B4	L	17.05	13.45		
		M	17.25	13.57		
		H	17.92	14.33	-92.31	-88.37
	12	L	11.35	7.68		
		M	11.92	8.59		
		H	13.25	9.12	-80.15	-77.25
		L				
		M				
		H				
NOTE :						

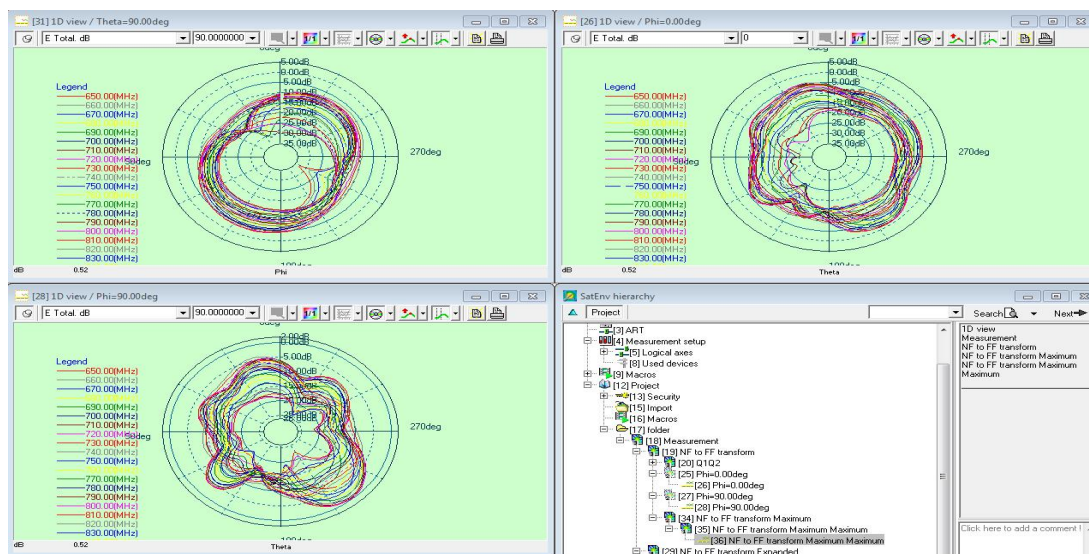
2.1 4G Standing wave diagram





2.2 LTE 650-900MHz Passive data

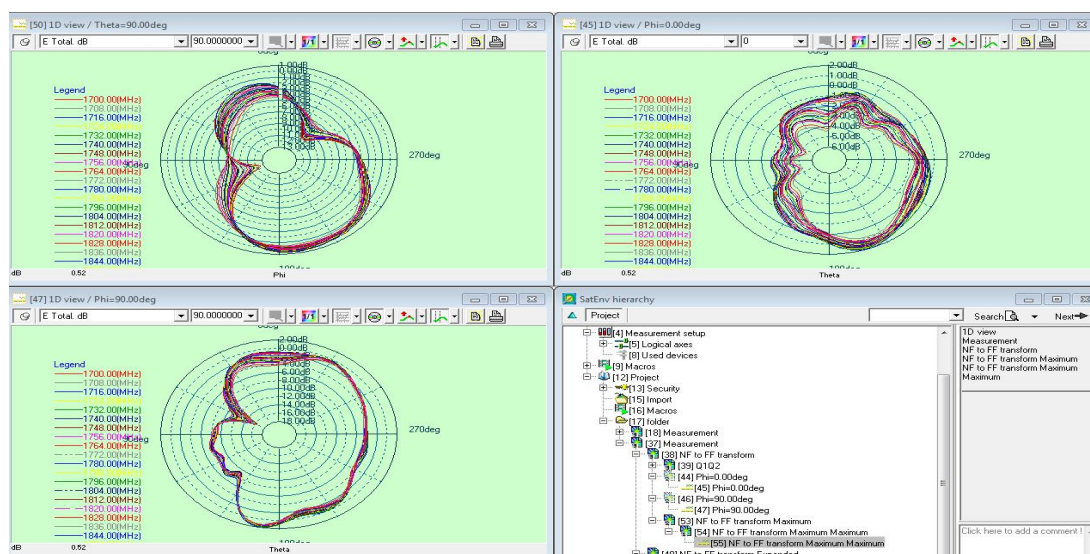
Frequency	Efficiency	Frequency	Gain dBi
650MHz	7%	650MHz	-5.75
660MHz	8%	660MHz	-4.86
670MHz	10%	670MHz	-3.85
680MHz	12%	680MHz	-2.75
690MHz	15%	690MHz	-1.90
700MHz	19%	700MHz	-0.97
710MHz	21%	710MHz	-0.47
720MHz	24%	720MHz	-0.21
730MHz	23%	730MHz	-0.49
740MHz	20%	740MHz	-1.30
750MHz	14%	750MHz	-2.82
760MHz	9%	760MHz	-4.79
770MHz	6%	770MHz	-6.75
780MHz	4%	780MHz	-9.23
790MHz	2%	790MHz	-11.80
800MHz	2%	800MHz	-13.48
810MHz	2%	810MHz	-13.93
820MHz	2%	820MHz	-13.50
830MHz	3%	830MHz	-12.91
840MHz	3%	840MHz	-12.13
850MHz	5%	850MHz	-10.30
860MHz	6%	860MHz	-8.76
870MHz	7%	870MHz	-7.50
880MHz	10%	880MHz	-6.12
890MHz	12%	890MHz	-5.02
900MHz	14%	900MHz	-3.90





2.3 LTE 1700-1900mhz Passive data

Frequency	Efficiency(	Frequency	Gain dBi
1700MHz	61%	1700MHz	2.15
1708MHz	61%	1708MHz	2.21
1716MHz	62%	1716MHz	2.44
1724MHz	60%	1724MHz	2.23
1732MHz	61%	1732MHz	2.37
1740MHz	59%	1740MHz	2.08
1748MHz	59%	1748MHz	2.03
1756MHz	58%	1756MHz	1.99
1764MHz	57%	1764MHz	1.87
1772MHz	58%	1772MHz	2.06
1780MHz	58%	1780MHz	2.03
1788MHz	57%	1788MHz	1.99
1796MHz	58%	1796MHz	2.08
1804MHz	56%	1804MHz	1.85
1812MHz	55%	1812MHz	1.73
1820MHz	54%	1820MHz	1.60
1828MHz	54%	1828MHz	1.53
1836MHz	53%	1836MHz	1.52
1844MHz	51%	1844MHz	1.31
1852MHz	52%	1852MHz	1.42
1860MHz	52%	1860MHz	1.36
1868MHz	49%	1868MHz	1.25
1876MHz	50%	1876MHz	1.37
1884MHz	50%	1884MHz	1.37
1892MHz	48%	1892MHz	1.29
1900MHz	46%	1900MHz	1.11



2.4 WiFi test data diagram

2.4.1 Sample Active test date: (WIFI 2.4G)

Application Information			
O4Version	5.230.336		
TotalTime	14m 8s 914ms		
AdditionalInfor	802.11b : 11Mbps		
Test	Wifi 2.4G		
Result	1	7	13
Frequency (MHz)	2412	2442	2472
MAS(dBm)	13.31	13.17	11.81
MaxposSens			-84.38

Test Result		Wifi 2G TRP			Test Result		Wifi 2G TIS	
		1	7	13			13	
Frequency (MHz)		2412	2442	2472	Frequency (MHz)		2472	
TRP (dBm)		9.25	8.92	7.69	TIS (dBm)		-81.19	
NHPRP (dBm)		7.11	6.62	5.2	NHPIS (dBm)		-78.67	
MAX (dBm)		13.31	13.17	11.81	RSSIAve		7.94	
					MaxPosRSSI		11.13	
					MaxPosSens		-84.38	

2.4.2 wifi antenna

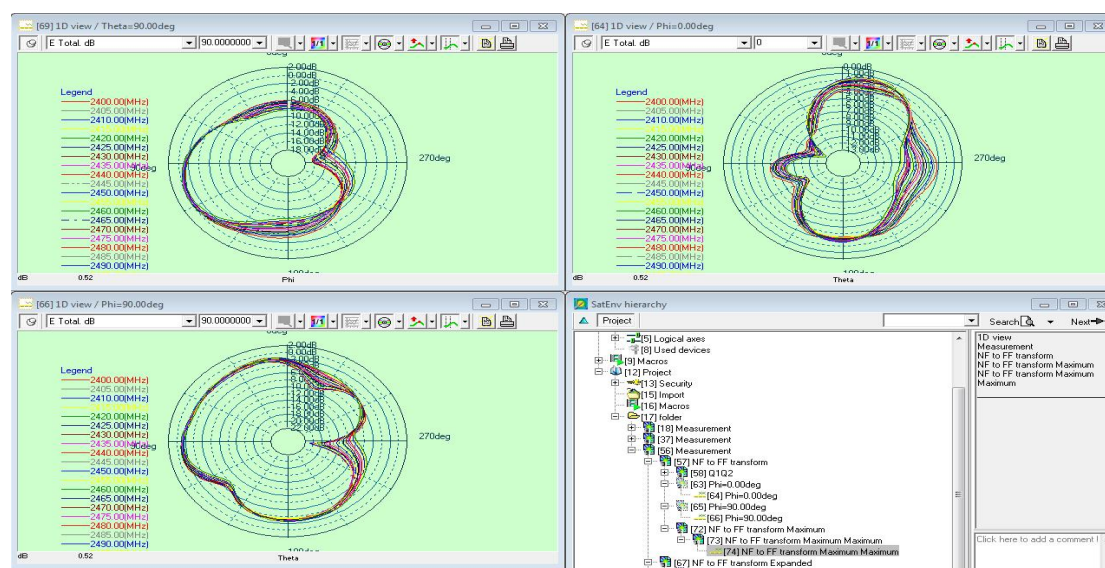


2.4.3 WIFI Standing wave diagram



2.4.4 WIFI 2400-2500mhz Passive test report

Frequency	Efficiency	Frequency	Gain dBi
2400MHz	31%	2400MHz	(0.06)
2405MHz	32%	2405MHz	(0.15)
2410MHz	31%	2410MHz	(0.18)
2415MHz	31%	2415MHz	(0.28)
2420MHz	32%	2420MHz	(0.06)
2425MHz	31%	2425MHz	(0.19)
2430MHz	31%	2430MHz	(0.28)
2435MHz	30%	2435MHz	(0.39)
2440MHz	29%	2440MHz	(0.57)
2445MHz	29%	2445MHz	(0.47)
2450MHz	30%	2450MHz	(0.40)
2455MHz	30%	2455MHz	(0.48)
2460MHz	31%	2460MHz	(0.31)
2465MHz	30%	2465MHz	(0.54)
2470MHz	29%	2470MHz	(0.50)
2475MHz	31%	2475MHz	(0.36)
2480MHz	31%	2480MHz	(0.21)
2485MHz	32%	2485MHz	(0.10)
2490MHz	31%	2490MHz	(0.19)
2495MHz	30%	2495MHz	(0.35)
2500MHz	30%	2500MHz	(0.35)





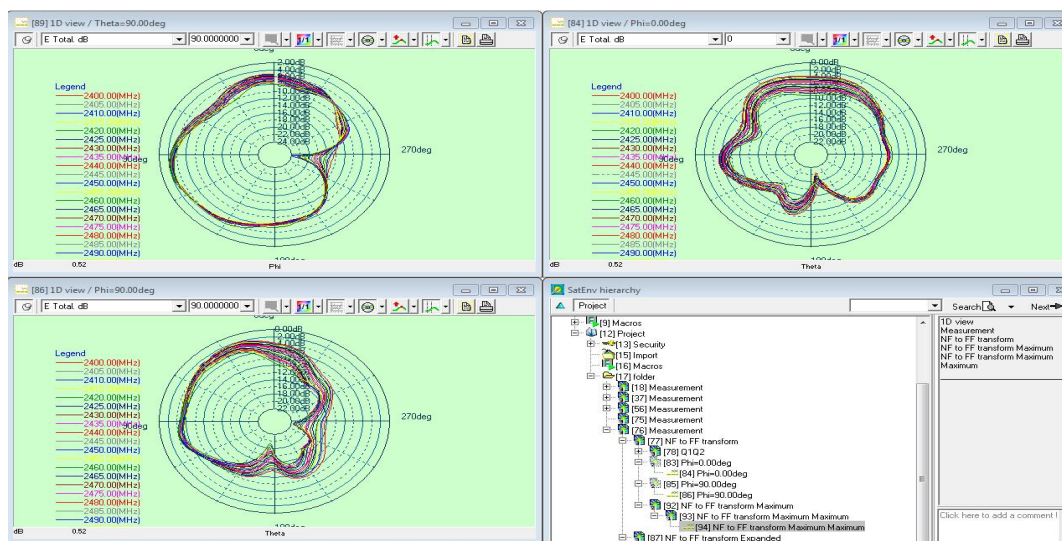
2.5 BT Data Report

2.5.1 BT Standing wave diagram



2.5.2 BT 2400-2500mhz Passive test report

Frequency	Efficiency	Frequency	Gain dBi
2400MHz	19%	2400MHz	-2.24812
2405MHz	18%	2405MHz	-2.41067
2410MHz	18%	2410MHz	-2.43852
2415MHz	18%	2415MHz	-2.4448
2420MHz	17%	2420MHz	-2.61945
2425MHz	17%	2425MHz	-2.69544
2430MHz	16%	2430MHz	-2.81533
2435MHz	16%	2435MHz	-3.0279
2440MHz	15%	2440MHz	-3.1372
2445MHz	15%	2445MHz	-3.32098
2450MHz	15%	2450MHz	-3.41386
2455MHz	14%	2455MHz	-3.54753
2460MHz	14%	2460MHz	-3.61975
2465MHz	13%	2465MHz	-3.82137
2470MHz	13%	2470MHz	-3.86807
2475MHz	13%	2475MHz	-3.95139
2480MHz	13%	2480MHz	-4.02789
2485MHz	13%	2485MHz	-4.08219
2490MHz	12%	2490MHz	-4.22758
2495MHz	12%	2495MHz	-4.24764
2500MHz	12%	2500MHz	-4.41763





Shenzhen Toppin Iot Technology Co., LTD

3.Contact us

Please contact us if you have any questions!

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Thanks for your comment!