



规格承认书

SPECIFICATION FOR APPROVAL

日期
DATE: 2025.10.11

版本
REV.: V1.0

客 户
CUSTOMER: Asiatelco Technologies Co.

客 户 料 号
CUSTOMER P/N:

品 名
PART NAME: AN99-MAIN Antenna

供 方 料 号
SUPPLIER P/N: RQ03B140822B-MAIN

送样日期 Date:		送样数量 Q'TY:	Pcs
客户确认 CUSTOMER APPROVED BY			
工程研发部	生产采购部	承认	
ENGINEER R&D DEPT	BUSSINESS DEPT	APPROVED BY	

供方确认 SUPPLIER SIGNATURE		
研发部	工程部	批准
ENGINEER R&D DEPT	ENGINEER R&D DEPT	APPROVAL
宋旭辉	周俊	傅以成

Index

1. RF Fixture Experiment.....	3
1.1 Test Setup.....	3
1.2 UE configuration.....	4
2. Test Result.....	5
2.1 Passive Test Result(S parameters).....	5
3. Antenna drawings.....	7

1. RF Fixture Experiment

1.1 Test Setup

1.1.1 VNA Test Setup

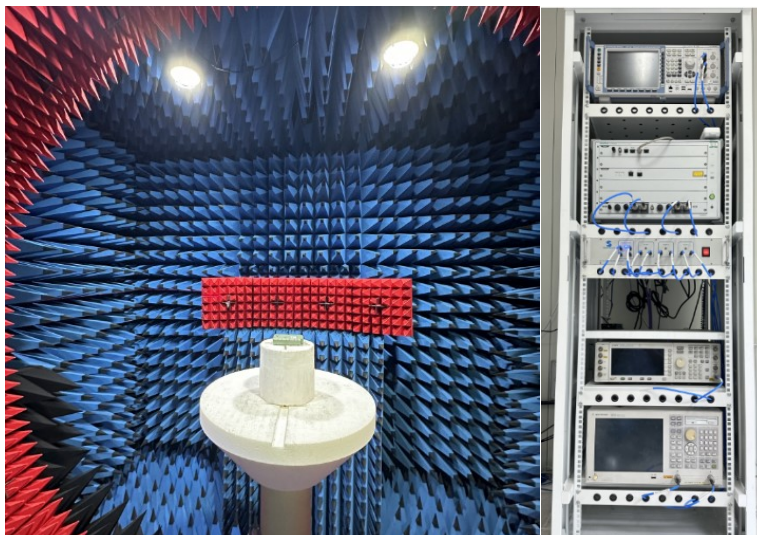
VSWR and Return Loss measurements (S_{11}) were performed using an Keysight E5071C Network Analyzer. The isolation between antennas is also tested. The testing was performed with apparatus in free space.

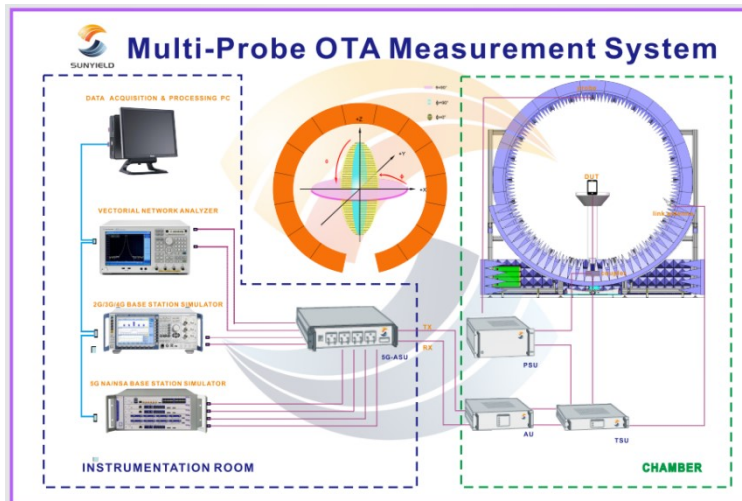


1.1.2 Anechoic Chamber Test Setup

When we test Gain and Efficiency of the antenna, we will use the Multi-Probe OTA Measurement System 3D chamber.

The chamber provides test frequency from 400MHz to 6GHz. The real test environment is showing as following picture





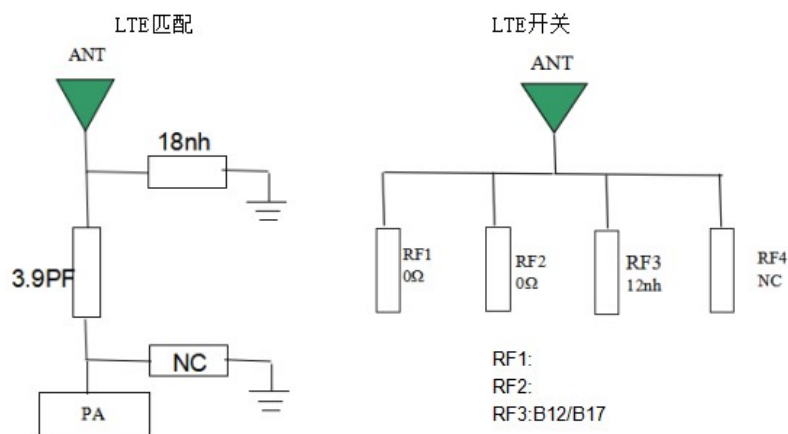
1.2 UE configuration

1.2.1 Antenna location pictures



1.2.2 RF matching for different antennas

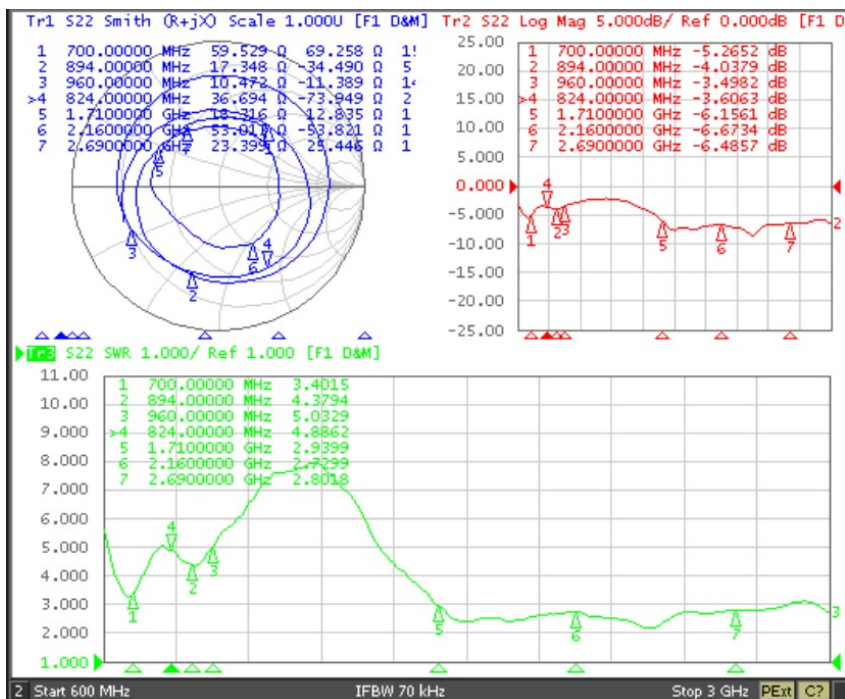
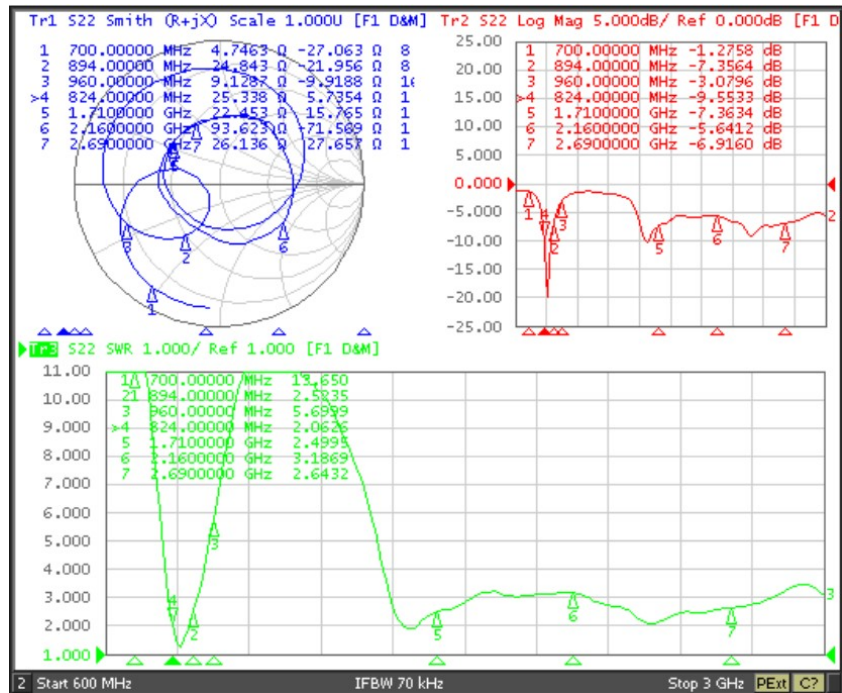
Main antenna matching



2. Test Result

2.1 Passive Test Result(S parameters)

Main antenna S11



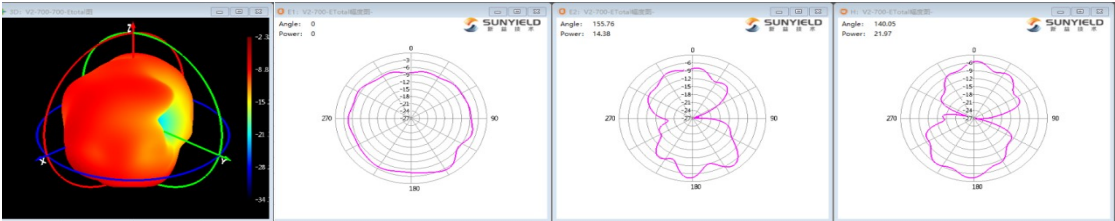
LTE Antenna								
frequency (MHz)	gain(dBi)	efficiency (%)	frequency (MHz)	gain(dBi)	efficiency (%)	frequency (MHz)	gain(dBi)	efficiency (%)
700	-2.57	27.97	1710	5.21	59.49	2250	2.48	50.82
710	-2.99	27.47	1730	4.68	49.4	2270	2.87	52.83
720	-2.24	29.8	1750	3.36	57.16	2290	2.14	48.46
730	-1.86	29.21	1770	2.05	46.22	2310	1.97	47
740	-1.32	30.07	1790	1.85	54.29	2330	2.42	44.72
750	-0.45	33.99	1810	2.01	52.93	2350	2.48	42.8
760	-0.08	35.74	1830	1.42	44.67	2370	2.99	45.97
770	-0.45	34.97	1850	1.99	55.82	2390	2.36	44.73
780	-0.73	33.26	1870	1.4	40.54	2410	3.37	55.02
790	-0.17	36.8	1890	3.2	57.54	2430	3.19	43.97
800	0.88	41.33	1910	2.11	38.07	2450	4.29	56.34
810	1.21	43.45	1930	3.41	59.02	2470	3.73	49.43
820	2.63	55.29	1950	1.28	38.81	2490	3.63	51.57
830	3.23	74.91	1970	2.59	50.18	2510	2.98	47.05
840	3.47	78.55	1990	3.56	47.12	2530	3.27	50.04
850	3	74.19	2010	-0.33	42.54	2550	3.26	50.86
860	2.89	69.27	2030	-0.66	43.06	2570	2.08	41.53
870	2.51	60.55	2050	-0.39	36.36	2590	1.98	50.15
880	2.13	55.84	2070	0.43	48.95	2610	1.1	40.15
890	2.38	58.97	2090	-0.61	36.44	2630	1.68	50.52
900	1.82	53.39	2110	0.32	44.7	2650	1.02	39.38
910	-0.36	38.08	2130	-0.45	39	2670	1.22	50.64
920	0.49	34.24	2150	0.78	48.68	2690	-0.07	40.22
930	0.69	36.15	2170	-0.63	39.44			
940	0.32	46.14	2190	0.1	42.47			
950	-0.39	35.76	2210	0.87	52.57			
960	-1.15	23.42	2230	2.04	52.64			

2.2Active Test Result(TRP TIS)

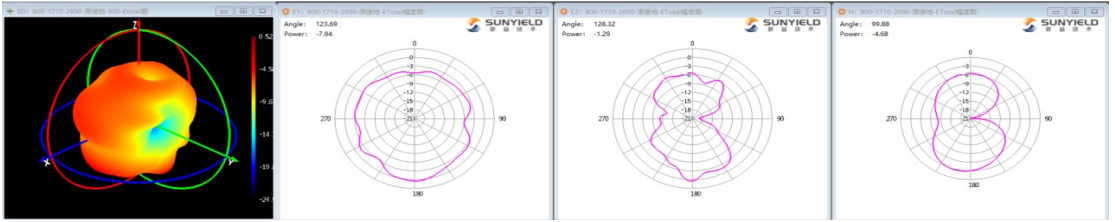
Band	Channel	TRP	TIS	Band	Channel	TRP	TIS
FDD_B2-10MHz	18650	21.01		FDD_B8-10MHz	21500	21	
	18900	22.19			21625	19.64	
	19150	20.04	-93.8		21750	20.06	-91.05
FDD_B3-10MHz	19575	21.2		FDD_B12-5MHz	23035	17.52	
	19900	20.39			23095	17.41	
	19250	18.85	-85.97		23155	20.02	-96.77
FDD_B4-10MHz	20000	19.07		FDD_B17-10MHz	23780	18.2	
	20175	20.13			23790	16.77	
	20350	19.94	-92.78		23800	18.91	-92.32
FDD_B5-10MHz	20450	22.16		FDD_B66-10MHz	132022	19.41	
	20525	21.77			132322	20.02	
	20600	22.12	-93.82		132622	20.64	-91.78
FDD_B7-10MHz	20800	19.8					
	21100	21.02					
	21400	19.94	-90.42				

2.3 Radiation Patterns:2D/3D

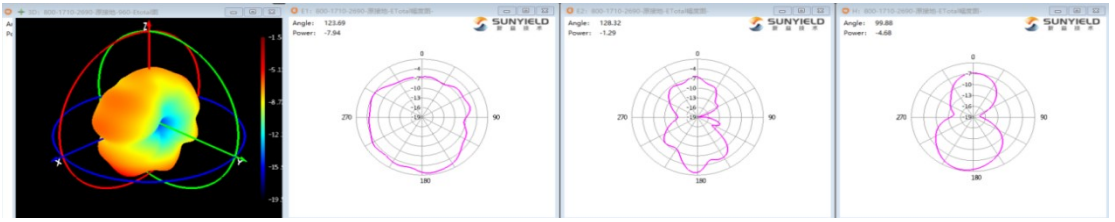
700M



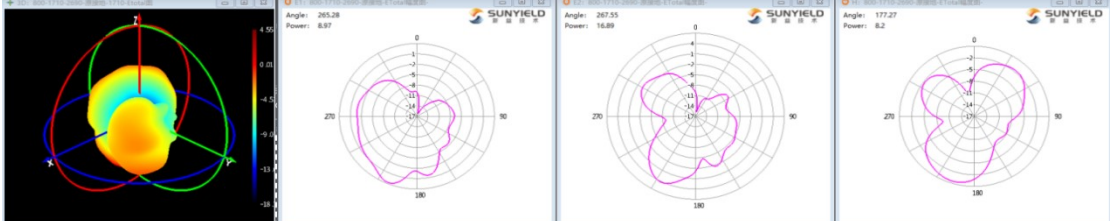
900M



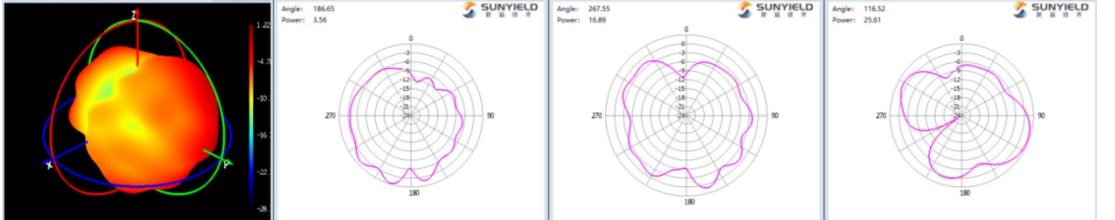
960M



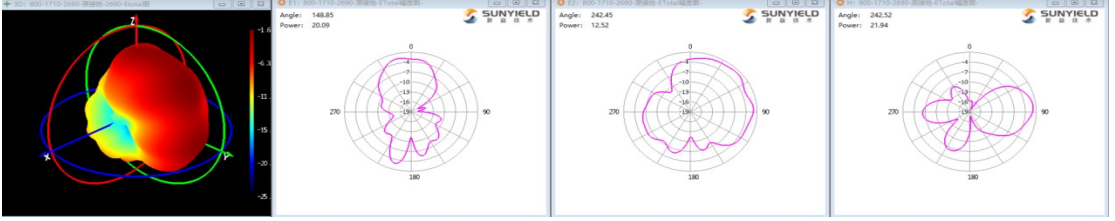
1710M



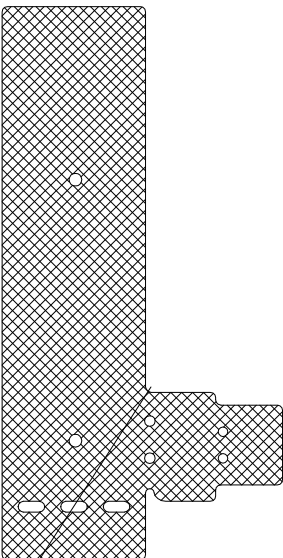
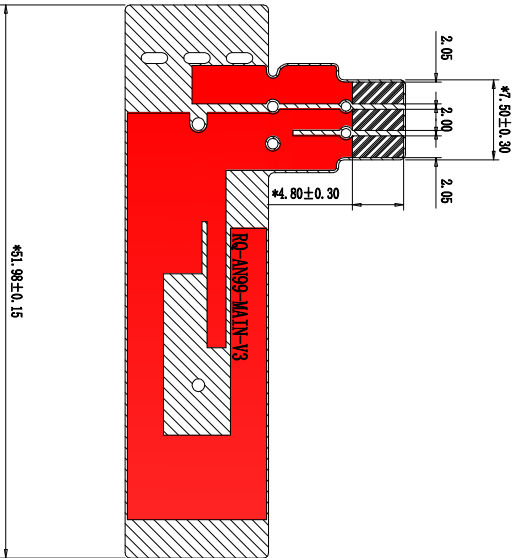
2160M



2690M



黑色哑光油墨印刷白色亮光字体
整板出货



NOTES:

1. 红色为铜材质部分；空白为基材；黄色部分为镀金区；蓝色为背胶区域；
2. 刀模不可伤到线路，镀金区要与线路导通；
3. 表面不可以有污物、擦伤、黑点、镀金后断裂及脱落等不良现象；
4. 材料：FPC单面板[PI (EP) 半对半基材+胶 (3M 9471 0.05mm)+表面 黑色油墨 (优力) (>0.01mm)]；
5. 反面背胶为 3M 9471；
6. 金手指表面镀金(厚度：0.5u"-1.5u")，不可有氧化现象(需过盐雾实验)；
盐雾实验48±1小时后表面无腐蚀点和镀层脱落；
7. 标*为重点尺寸，未标注公差请按B级公差检验。

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日期	修 改 内 容	版 本	修 订
1	2	3	4

				深 圳 市 瑞 强 通 信 有 限 公 司			
RF PA				机 种	AN99	日期	2025. 10. 10
0~10	±0.10	○	0.02	品 名	MAIN-FPC	设计	
10~20	±0.12	◎	0.03	料 号	RQ03B140822B-MAIN	审核	结构
20~40	±0.15	⊥	0.02	材 质	PI	射频	
40~50	±0.20	∇	0.04	模面处理		确认	
B	∇	0.02		外观处理		单位	mm
5	6	7	8			比例	FIT 版本 V3