



承 认 书

APPROVAL SHEET

客户名称 Customer	惠达			
客户料号 Customer P/N				
项目名称 Project Name	HD200B Left 4G-LTE Antenna			
供应商名称 Supplier	上海圣丹纳无线科技有限公司 Shanghai Saintenna Wireless Technology Co. , Ltd.			
圣丹纳物料型号 Saintenna P/N	SAA32058A			
是否符合 RoHS ROHS Compliant	Yes			
送样日期 Providing Date				
供应商 Supplier	制定 Prepared by	设计 Designer	品质 QA	批准 Approver
地址: 上海市宝山区园丰路69号1幢601室 Address: Room 601, Building 1, No. 69 Yuanfeng Road, Baoshan District, Shanghai 200444, China				
电话/Tel: 086-021-56165098; 传真/Fax: 086-021-56165098				
客户 Customer	编制 Prepared by	审核 Checked by	批准 Approver	

注: 必须手工签字确认(Note: Signature must be confirmed by hand)

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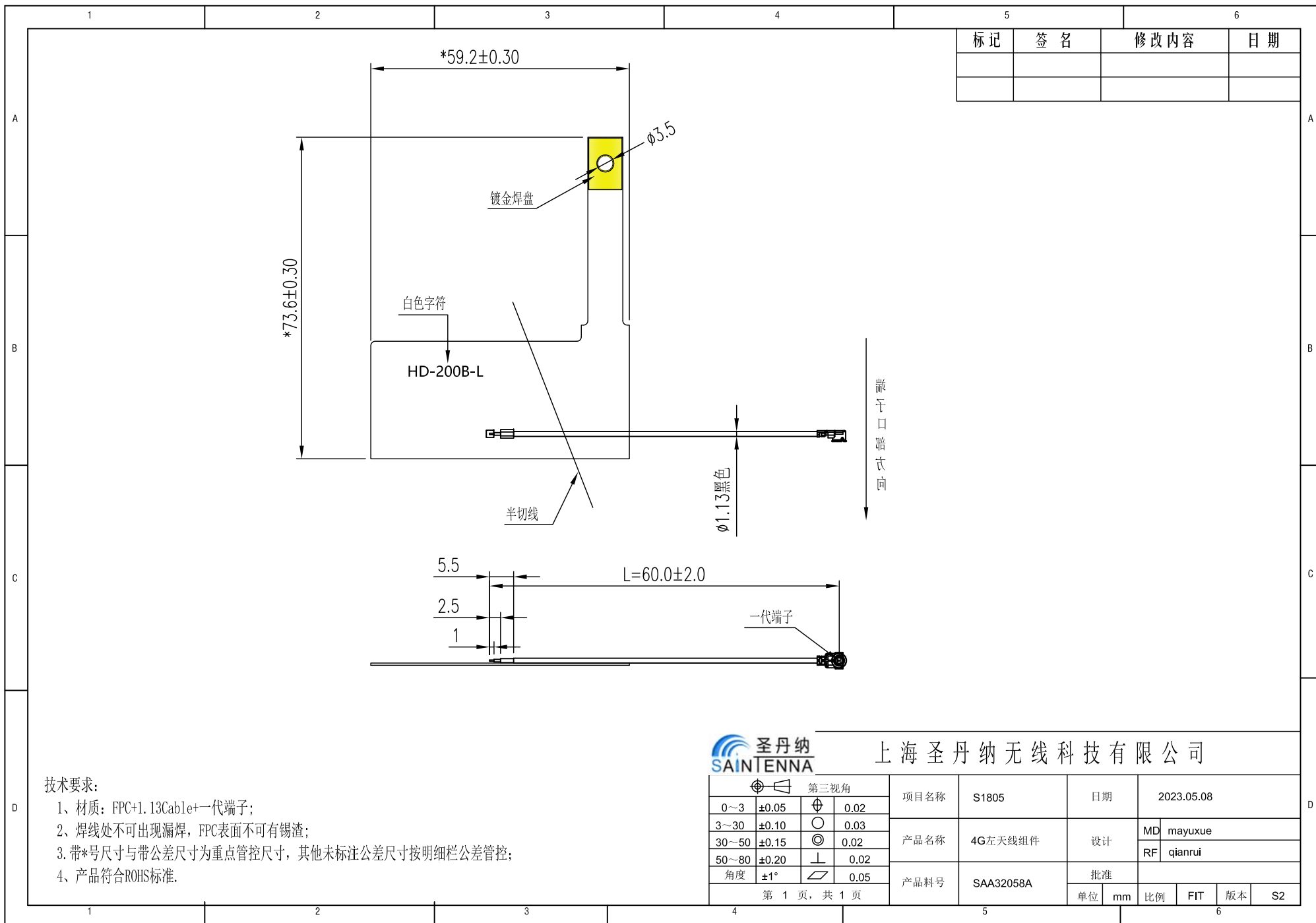
规格/Specification

1. 机械规格/Mechanical Specification

- 连接方式/Connect Type..... 一代端子
- 工作温度/Work Temperature..... -40~85℃
- 存储温度/Storage Temperature..... -40~85℃

2. 电性能参数/Electrical Specification

- 频段/Frequency Range..... 820MHz~960MHz
1710MHz~2700MHz
- 驻波比/VSWR.....
- 效率/Efficiency..... Max60.8%
- 增益/Peak Gain..... Max3.41dBi
- 极化/Polarization..... Linear
- 特性阻抗/Input Impedance..... 50Ω
- 最大承载功率/Max Input Power..... 5W





惠达HD200B项目天线测试报告

上海圣丹纳无线科技有限公司
Shanghai Saintenna Wireless Technology Co., LTD.

Project Information

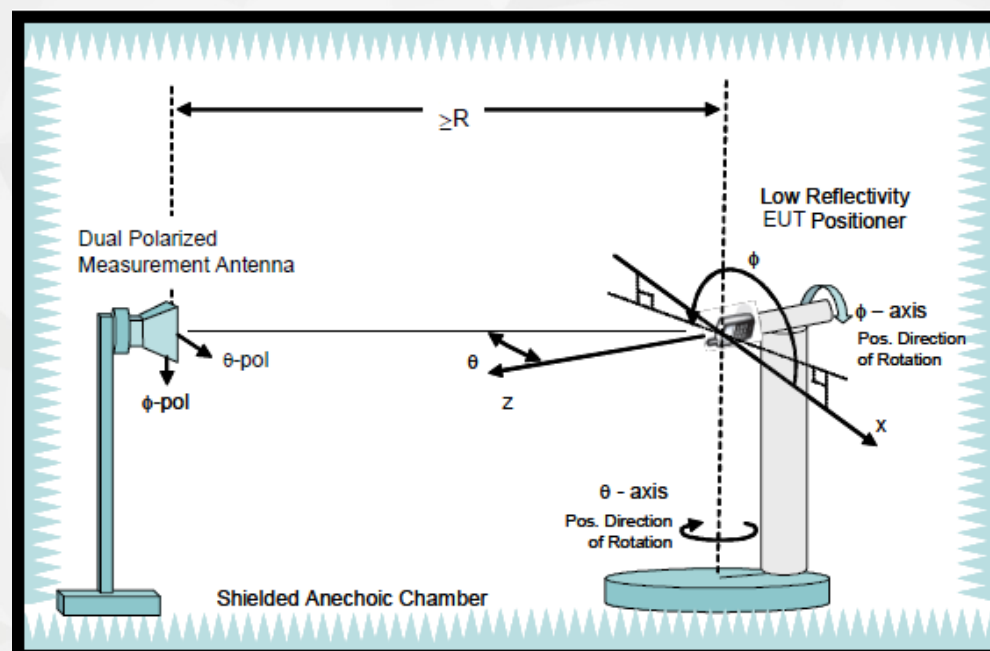
客户名称 Customer Name	惠达
项目名称 Project Name	HD200B
工作频段 Working Band	LTE
规格 Description	
版本 Version	V1.0
日期 Date	2023-04-13

Tuning Instrument

Network Analyzer	Agilent E5071C
Frequency Range	100KHz ~ 8.5GHz
Test Item	Return Loss/VSWR/Smith Chart /Isolation

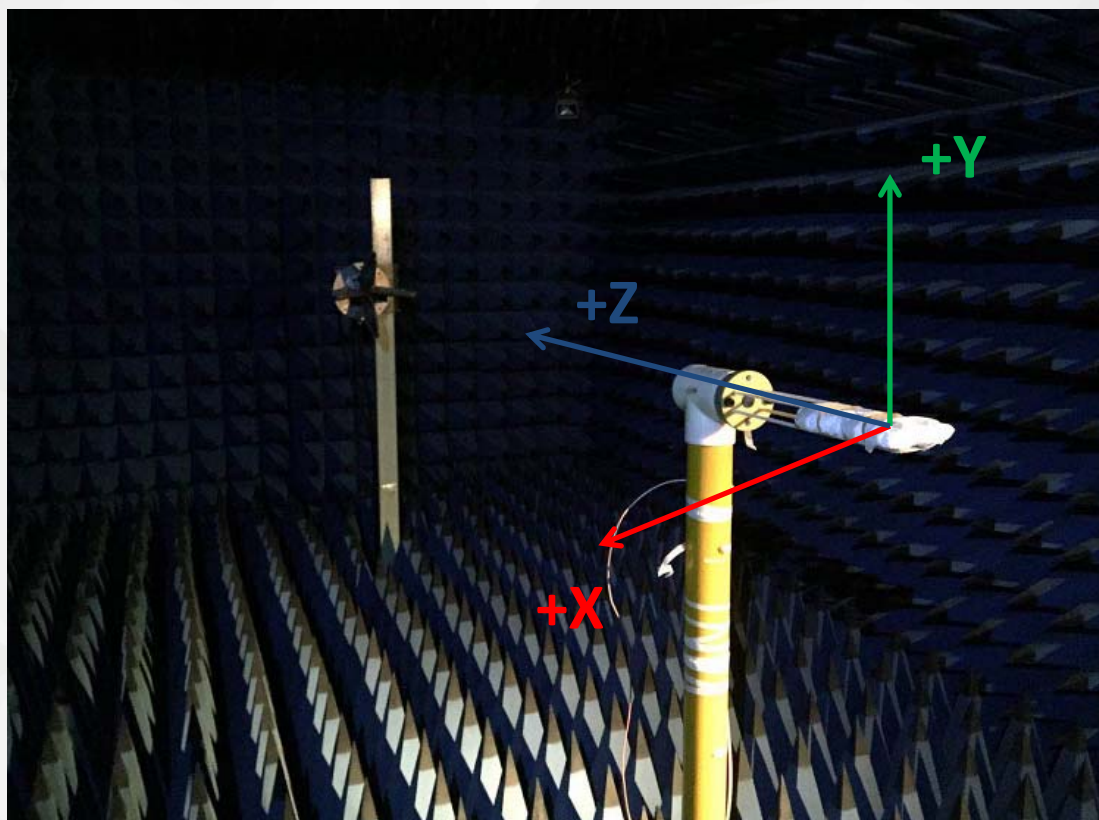


Typical Setup for Test System



Combined-Axes System

Anechoic Chamber



Combined-Axes System

Comment: E1 plane means XZ section, E2 plane means YZ section, H plane means XY section.

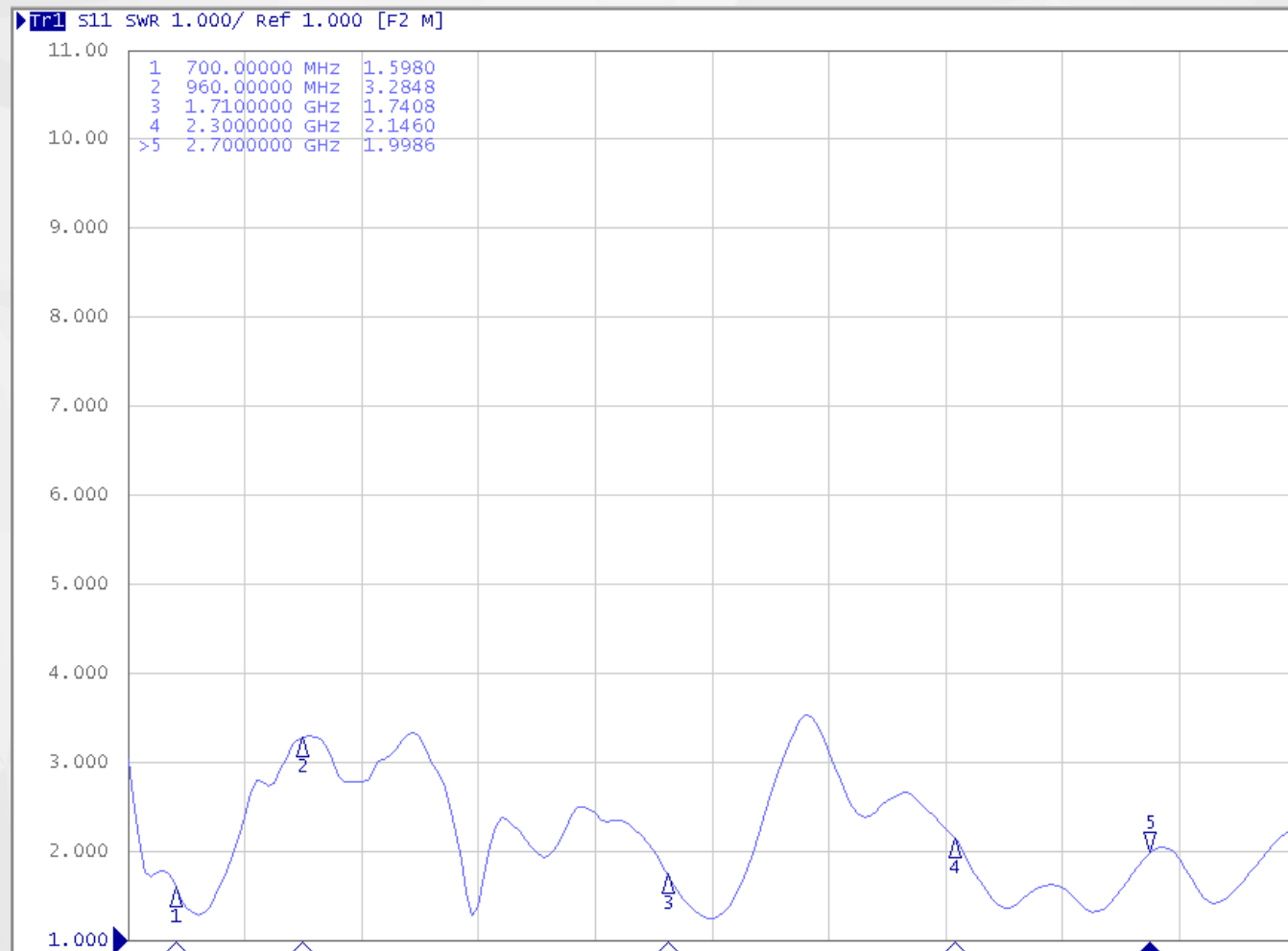
评估后的暂定天线位置



#1

#2

VSWR #1



Test Result – Passive

Freq (MHz)	Gain	efficiency
700	0.19	52.32
710	-0.09	50.25
720	-0.45	46.95
730	-1.33	42.18
740	-1.73	40.03
750	-1.5	39.7
760	-1.4	37.53
770	-0.69	42.29
780	-0.35	46.48
790	-0.36	48.28
800	-0.23	52.47
810	-0.53	50.9
820	-0.34	53.98
830	0.26	56.41
840	0.37	55.04
850	0	50.84
860	-0.11	48.9
870	-0.03	48.65
880	-0.3	48.21
890	-1.01	44.21
900	-1.39	39.59
910	-0.7	41.73
920	-0.82	40.42
930	-0.79	40.46
940	0.04	40.67
950	0.41	39.86
960	0.27	38.33

Freq (MHz)	Gain	efficiency
1710	2.25	69.51
1730	2.36	70.09
1750	2.52	69.11
1770	2.85	71.39
1790	3.11	71.31
1810	2.51	75.65
1830	2.58	77.77
1850	3.03	73.62
1870	3.68	71.44
1890	3.64	65.56
1910	3.52	62.73
1930	4.08	67.78
1950	4.35	71.37
1970	4.21	72.21
1990	4.23	74
2010	3.98	74.88
2030	3.78	72.14
2050	3.83	72.79
2070	3.38	69.4
2090	3.01	62.7
2110	2.73	59.44
2130	2.36	58.55
2150	1.61	54.88
2170	1.01	54.89

Freq (MHz)	Gain	efficiency
2300	1.49	53.74
2320	1.64	53.1
2340	2.18	54.59
2360	2.51	58.15
2380	2.25	62.23
2400	1.88	63.45
2420	1.75	63.67
2440	2.14	65.87
2460	2.68	64.9
2480	3.18	67.83
2500	2.98	66.86
2520	3.07	66.3
2540	2.87	62.01
2560	2.91	61.53
2580	2.82	61.75
2600	2.54	59.43
2620	2.51	60.62
2640	2.87	62.19
2660	3.58	67.62
2680	3.93	68.15
2700	4.34	73.3

Test Result – Active

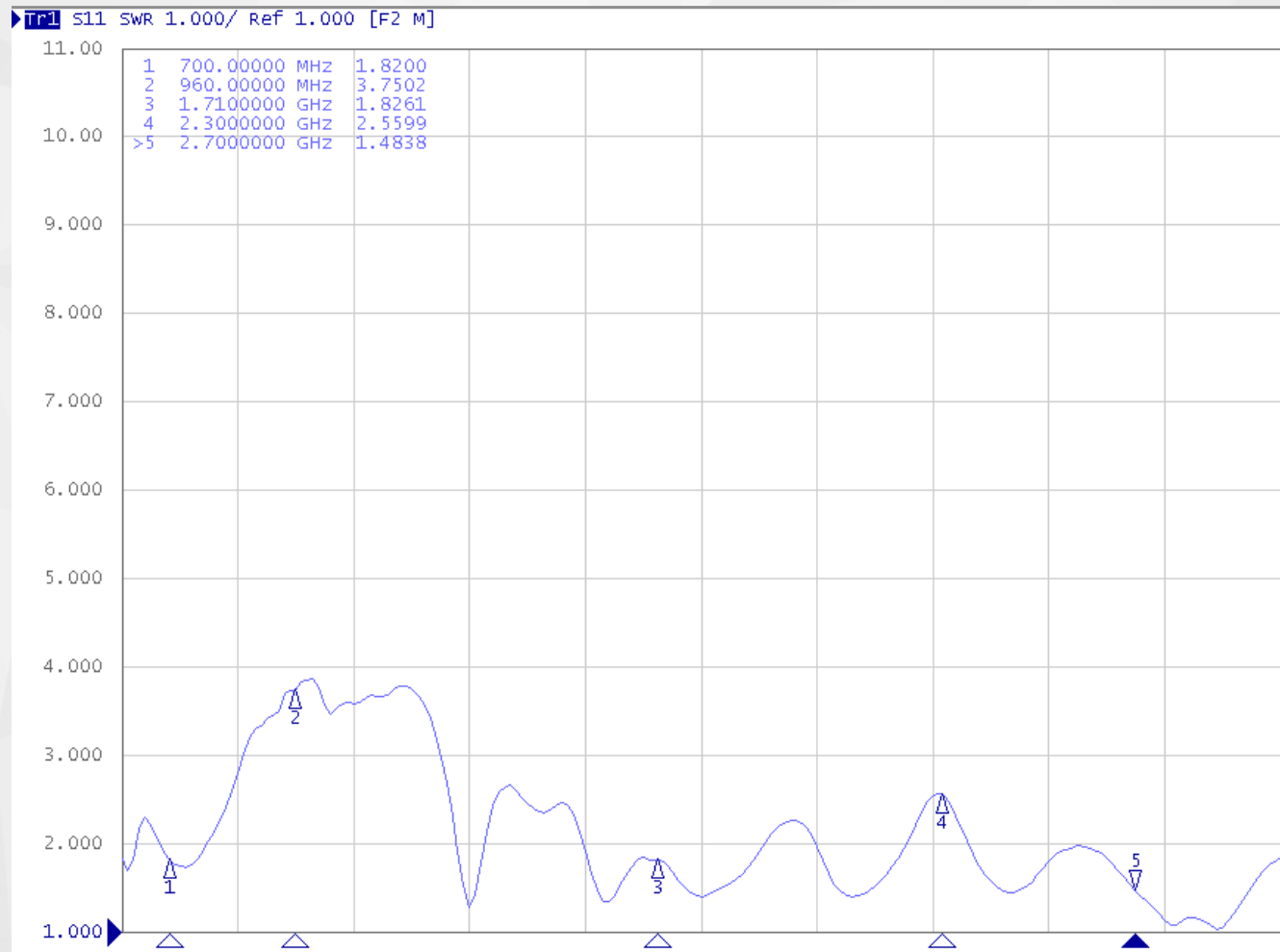
BAND		TRP		TIS
LTE B1	18050	20.67		
	18300	21.1		
	18550	22.62	550	-92.92
B2	18650	22.54		
	18900	21.77		
	19150	20.05	1150	-94.01
B3	19250	22.53		
	19575	22.42		
	19900	22.61	1900	-93.56
B4	20000	23.16		
	20175	23.43		
	20350	22.64	2350	-93.61
B5	20450	21.85		
	20525	19.21		
	20600	19.59	2600	-89.03
B7	20800	23.1		
	21100	21.85		
	21400	21.04	3400	-96.3
B8	21500	23.94		
	21625	22.44		
	21750	22.81	3750	-87.86

BAND		TRP		TIS
B12	23035	16.82		
	23095	20.48		
	23155	18.18	5155	-84.17
B13	23230	19.76	5230	-81.93
B18	23900	18.76		
	23925	21.47		
	23950	21.21	5950	-90.24
B19	24050	19.13		
	24075	20.01		
	24100	20.72	6100	-89.3
B20	24200	21.03	6200	-81.34
	24300	21.38		
	24400	21.58		
B25	26065	23.45		
	26365	22.22		
	26665	20.01	8665	-97.79
B26	26715	19.58		
	26865	19.68		
	27015	20.48	9015	-91.48
B28	27260	21.87		
	27435	22.73		
	27610	20.93	9610	-85.82

Test Result – Active

BAND		TRP		TIS
B66	132022	23.59		
	132322	23.99		
	132622	22.58	67086	-94.91
B38	37800	20.62		
	38000	21.46		
	38200	21.72	38200	-96.34
B39	38300	18.68		
	38450	18.24		
	38600	18.37	38600	-87.24
B40	38700	24.17		
	39150	23.6		
	39600	23.26	39600	-95.4
B41	39700	21.71		
	40620	21.93		
	41540	22.62	41540	-97.5

VSWR #2



Test Result – Passive

Freq (MHz)	Gain	efficiency
700	-0.37	42.79
710	-0.21	42.36
720	-0.36	45.41
730	-0.39	42.78
740	-0.26	41.39
750	-0.36	42.99
760	-0.81	45.07
770	-0.93	46.06
780	-0.23	40.21
790	0.86	45.8
800	1.31	53.25
810	1.59	53.58
820	1.89	56.41
830	2.37	59.93
840	2.5	59.04
850	2.72	54.11
860	3.04	53.17
870	3.17	54.12
880	2.7	56.12
890	1.5	54.84
900	0.87	50.69
910	1.11	53.94
920	1.16	53.94
930	1.37	55.6
940	1.17	55.73
950	0.74	54.71
960	0.57	54.06

Freq (MHz)	Gain	efficiency
1710	1.57	52.78
1730	1.95	53.32
1750	2.16	53.42
1770	2.76	56.74
1790	2.69	58.24
1810	2.86	62.73
1830	3.29	64.23
1850	3.38	61.53
1870	3.87	63.8
1890	4.13	64.31
1910	4.35	62.68
1930	4.69	66.57
1950	4.5	67.12
1970	4.48	65.5
1990	4.46	65.59
2010	4.37	66.88
2030	4.46	66.95
2050	4.99	70.28
2070	4.82	70.19
2090	4.33	66.53
2110	3.95	65.36
2130	3.97	67.67
2150	3.8	66.97
2170	3.72	70.35

Freq (MHz)	Gain	efficiency
2300	2.71	62.29
2320	2.01	58.26
2340	2.06	57.11
2360	2.09	58.53
2380	2.28	59.04
2400	2.11	57
2420	2.17	55.07
2440	2.59	56.04
2460	2.52	54.01
2480	2.65	55.84
2500	2.65	54.69
2520	2.59	53.89
2540	2.24	50.12
2560	2.16	50.12
2580	2.29	51.72
2600	2.07	51.1
2620	1.64	51.58
2640	1.83	51.54
2660	2.41	55.42
2680	2.46	55.17
2700	2.86	59.78

Test Result – Active

BAND		TRP		TIS
LTE B1	18050	21.74		
	18300	19.65		
	18550	20.92	550	-95.43
B2	18650	20.77		
	18900	20.22		
	19150	20.31	1150	-93.24
B3	19250	20.35		
	19575	20.89		
	19900	21.12	1900	-92.85
B4	20000	21.35		
	20175	20.64		
	20350	21.7	2350	-95.12
B5	20450	21.74		
	20525	18.97		
	20600	18.86	2600	-91.16
B7	20800	23.36		
	21100	23.82		
	21400	21.91	3400	-93.44
B8	21500	18.59		
	21625	18.48		
	21750	19.83	3750	-88.62

BAND		TRP		TIS
B12	23035	19.98		
	23095	22.02		
	23155	21.27	5155	-93.71
B13	23230	20.51	5230	-87.69
B18	23900	18.77		
	23925	19.88		
	23950	21.5	5950	-92.04
B19	24050	20.28		
	24075	19.03		
	24100	21.36	6100	-90.89
B20	24200	21.38	6200	-93.01
	24300	21.62		
	24400	20.38		
B25	26065	22.89		
	26365	22.1		
	26665	20.87	8665	-96.41
B26	26715	20.3		
	26865	21.31		
	27015	18.53	9015	-92.94
B28	27260	24.37		
	27435	24.65		
	27610	22.48	9610	-93.51

Test Result – Active

BAND		TRP		TIS
B66	132022	21.78		
	132322	22.02		
	132622	21.17	67086	-95.61
B38	37800	22.29		
	38000	22.82		
	38200	22.55	38200	-97.93
B39	38300	20.18		
	38450	20.01		
	38600	19.88	38600	-89.18
B40	38700	23.11		
	39150	21.75		
	39600	20.62	39600	-98.87
B41	39700	20.77		
	40620	23.51		
	41540	22.67	41540	-99.63