WAG-F-LBG0-00-052 Specification

1. Explanation of part number :

WAG	_	F	_	LBG0	_	00	_	052
(1)		(2)		(3)		(4)		(5)

(1) Product Type: Wireless Antenna

(2) Material: FPC

(3) Frequency : 1575.42/2400-2500/5150-5850MHz

(4) Coaxial Cable Type : 00

(5) Suffix : 052

2. Storage Condition:

Temperature -40 to +85℃
Humidity 20 to 65 %RH
Recommended storage condition:

Store in room condition as listed below: Temperature -20℃~+45ºC, Humidity 80% Max.

3. Operating Condition:

Temperature -40 to +85℃
Humidity 10 to 85 %RH

4. Electrical Specification :

Those specifications were specially defined for WLAN model, and all characteristics were measured in the customer's machine.

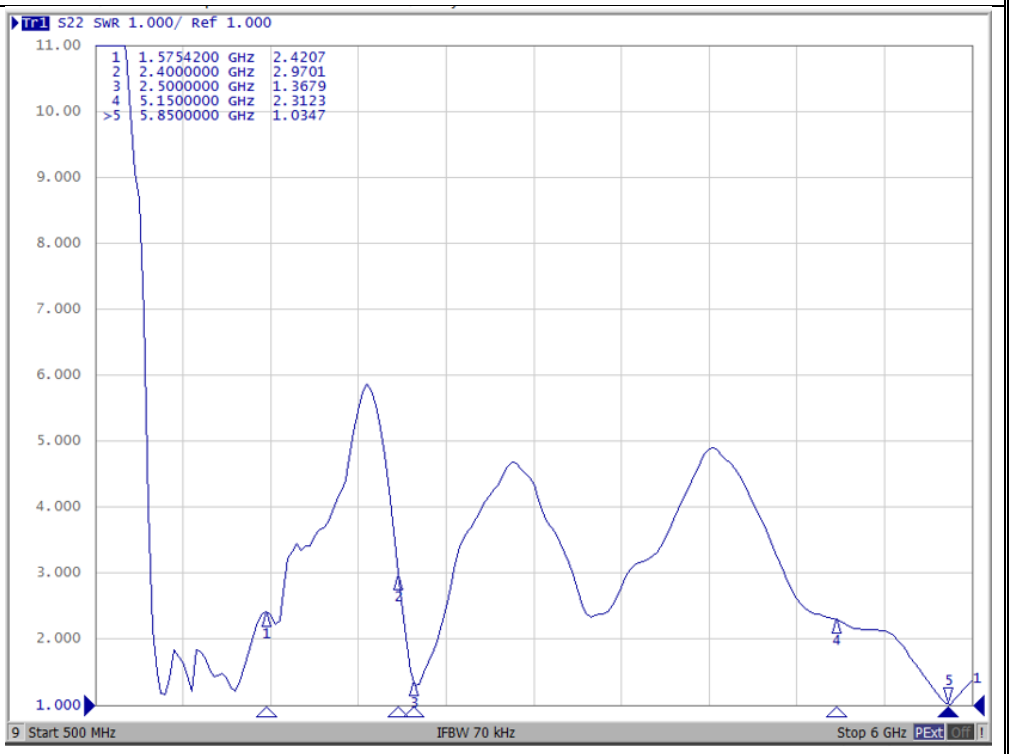
4-1. Frequency Band:

Frequency Band	MHz
WBG Antenna	1575.42/2400-2500/5150-5850MHz

4- 2.Impedance

50 ohm nominal

4-3. VSWR:

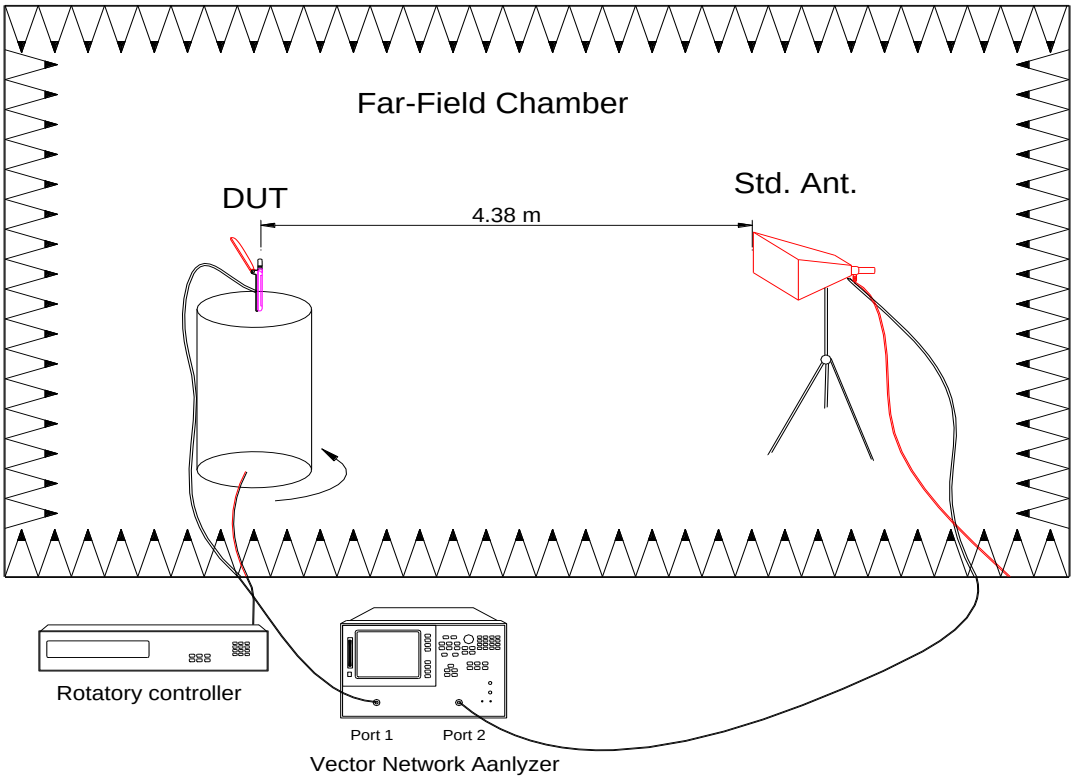
Frequency Band	1575.42	2400	2500	5150	5850
2-3-1. Typical Value:	≦4	≦5	≦3	≦4	≦3
2-3-2Measuring Method	1. A 50Ωcoaxial cable is connected to the fpcb antenna. Then this cable is connected to a network analyzer to measure the VSWR. 2. Keeping this jig away from metal at least 20 cm.				
2-3-3Picture					

4-4. Gain and Efficiency

4-4.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

4-4.2 Chamber definition



1. An anechoic chamber (8mx4mx3.5m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

2-4.3 Gain and Efficiency

Fre	Effi(db)	Gain(dBi)	Effi(%)	Fre	Effi(db)	Gain(dBi)	Effi(%)
1500	-1.81	2.08	65.91	5000	-3.33	1.05	46.44
1505	-1.64	2.16	68.56	5050	-3.13	2.12	48.64
1510	-1.99	1.71	63.27	5100	-2.93	3.05	50.88
1515	-1.77	1.9	66.56	5150	-2.99	3.49	50.22
1520	-2.1	1.56	61.72	5200	-2.96	3.75	50.55
1525	-1.94	1.67	64	5250	-2.61	4.31	54.88
1530	-2.3	1.25	58.91	5300	-2.86	4.01	51.81
1535	-1.88	1.61	64.84	5350	-2.83	4.04	52.16
1540	-2.27	1.1	59.24	5400	-3.02	3.86	49.94

1545	-1.94	1.37	63.94	5450	-2.97	3.97	50.42
1550	-2.25	1.1	59.63	5500	-2.99	3.94	50.25
1555	-1.89	1.43	64.68	5550	-2.81	4.01	52.34
1560	-2.39	0.89	57.63	5600	-2.5	4.38	56.18
1565	-1.96	1.33	63.69	5650	-2.5	4.11	56.2
1570	-2.14	1.09	61.05	5700	-2.23	4.43	59.91
1575	-2.41	0.9	57.38	5750	-2.07	4.62	62.04
1580	-2.6	0.81	54.97	5800	-2.01	4.42	63.01
1585	-2.1	1.21	61.65	5850	-1.78	4.62	66.43
1590	-2.52	0.87	55.97	5900	-1.58	4.64	69.55
1595	-2.08	1.31	61.9	5950	-0.91	5.06	81.02
1600	-2.43	1.01	57.14	6000	-1.09	4.78	77.82
1605	-2.1	1.37	61.62				
1610	-2.41	1.14	57.46				
1615	-2.2	1.49	60.24				
1620	-2.42	1.29	57.29				
2300	-5.77	-1.28	26.46				
2320	-4.83	-0.55	32.85				
2340	-4.2	-0.2	38.02				
2360	-3.73	0.07	42.34				
2380	-3.57	0.16	43.97				
2400	-4.26	-0.54	37.51				
2420	-3.53	0.21	44.39				
2440	-2.94	0.76	50.77				
2460	-2.4	1.26	57.48				
2480	-2.15	1.47	60.97				
2500	-2.16	1.38	60.75				
2520	-0.93	3	80.76				
2540	-1.04	3.05	78.7				
2560	-1.18	2.93	76.13				
2580	-1.3	2.8	74.12				
2600	-1.51	2.75	70.7				

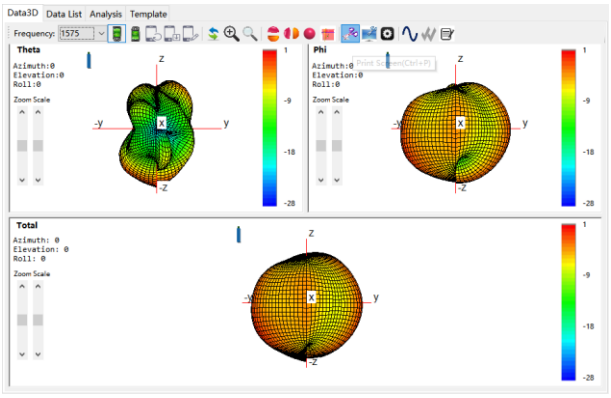
2-5.OTA And Data 3D

2-5.1 OTA And Boom

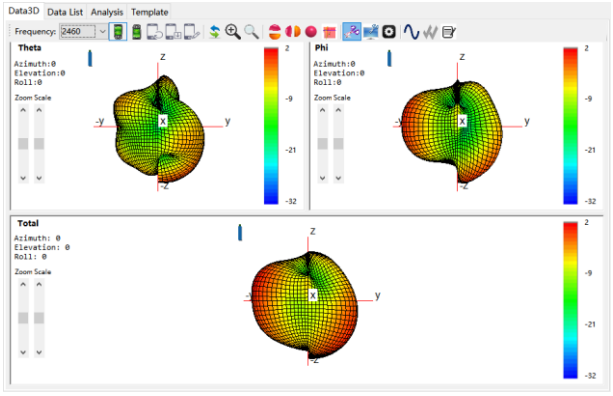
1、OTA

GPS.WIFI-2.4G				
802.11b	**6Mbps**	**TRP**	1	16.03
			7	16.52
			13	16.33
	54Mbps	**TIS**	1	-83.54
			7	-84.22
			13	-82.46
GPS		CNO	TIS	
		42.05	-155.24	

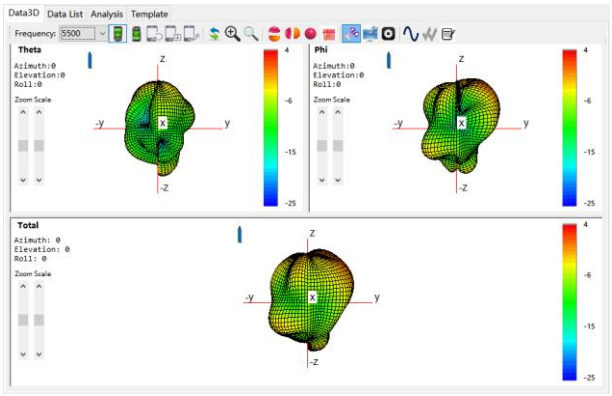
2-5.2 Data 3D



1575MHz

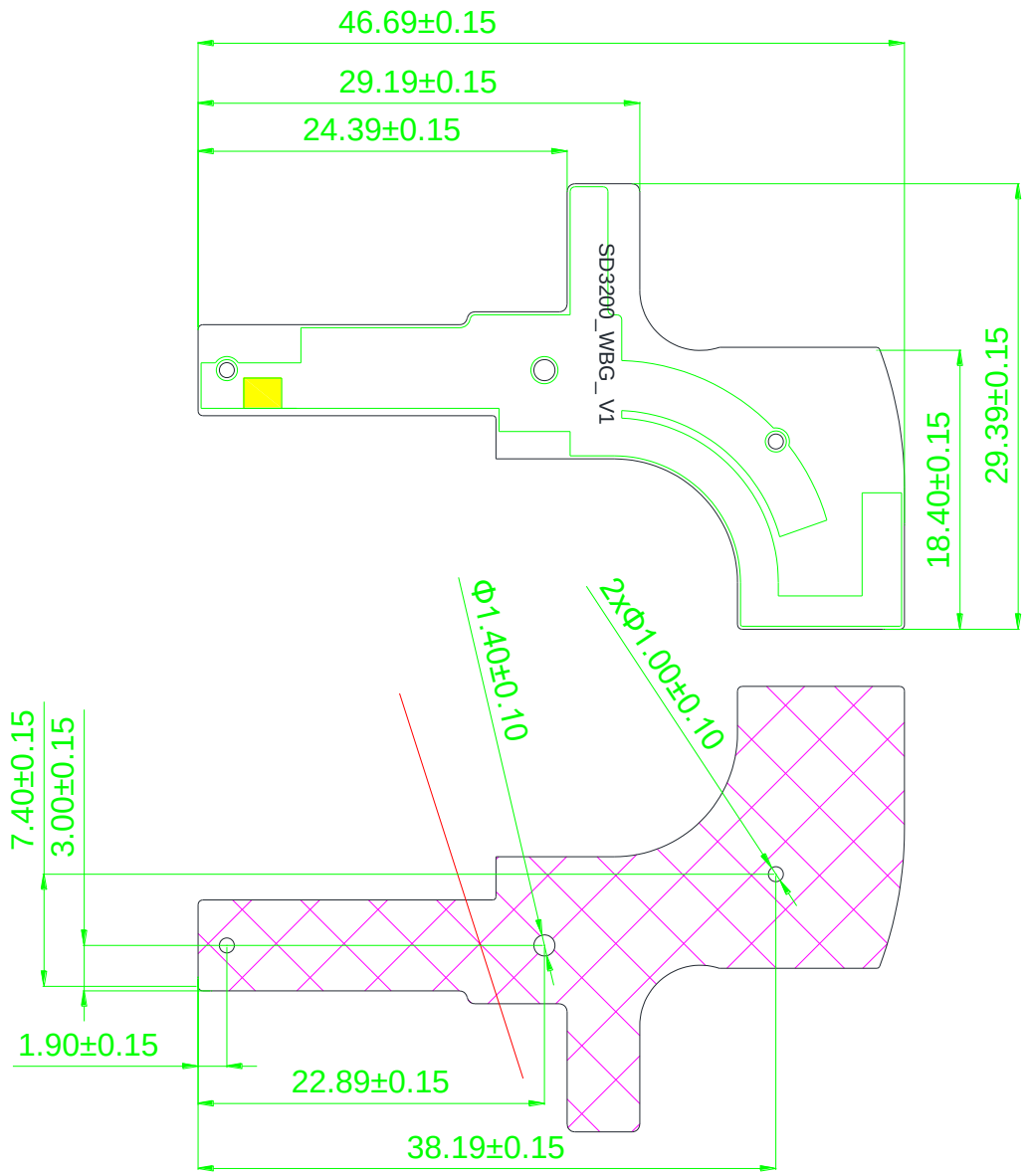


2460MHz



5500MHz

5.Mechanical Specification:



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DESIGNED BY: Eason	APPROVED BY：Jake		
TITLE： WAG-F-LBG0-00-052 Specification		DOCUMENT NO.	ENS
		PAGE REV.	P0

WAG-F-LTE12-00-237 Specification

1. Explanation of part number :

WAG	_	F	_	LTE12	_	00	_	237
(1)		(2)		(3)		(4)		(5)

(1) Product Type: Wireless Antenna

(2) Material: FPC

(3) Frequency : 617-960/1710-2690MHz

(4) Coaxial Cable Type : 00

(5) Suffix : 237

2. Storage Condition:

Temperature -40 to +85℃
Humidity 20 to 65 %RH
Recommended storage condition:

Store in room condition as listed below: Temperature -20℃~+45ºC, Humidity 80% Max.

3. Operating Condition:

Temperature -40 to +85℃
Humidity 10 to 85 %RH

4. Electrical Specification :

Those specifications were specially defined for DIV model, and all characteristics were measured in the customer's machine.

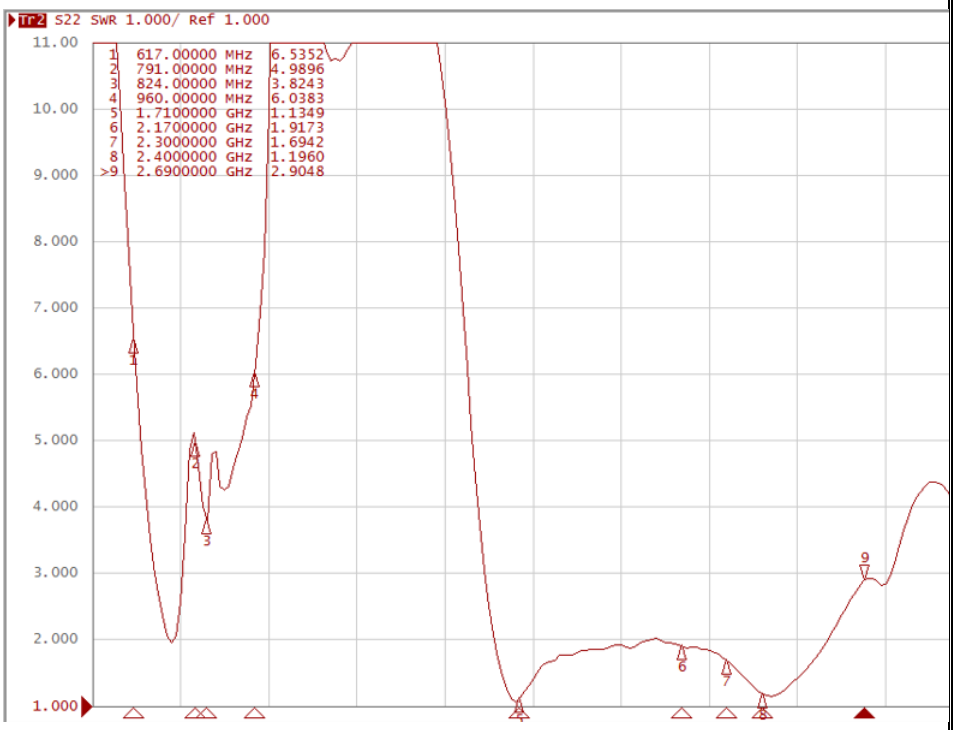
4-1. Frequency Band:

Frequency Band	MHz
DIV	617-960/1710-2690MHz

4- 2.Impedance

50 ohm nominal

4-3. VSWR:

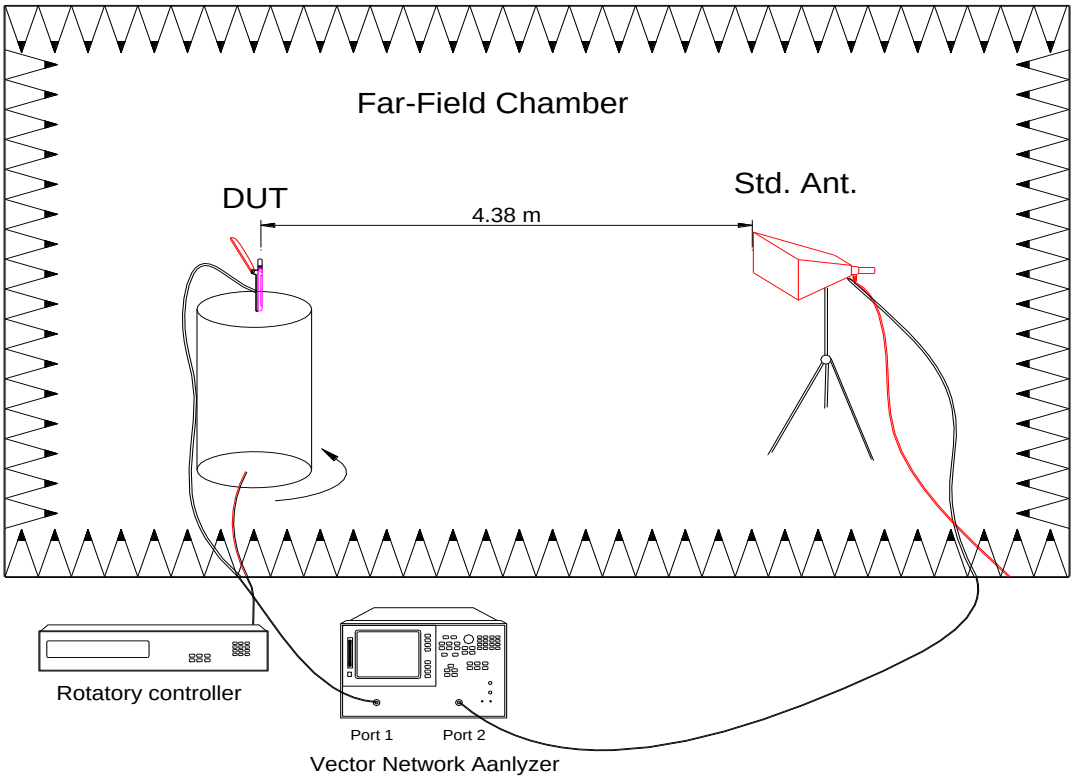
Frequency Band	617	960	1710	2200	2690
2-3-1. Typical Value:	≦2.5	≦3.5	≦3.0	≦3.5	≦2.5
2-3-2Measuring Method	1. A 50Ωcoaxial cable is connected to the fpcb antenna. Then this cable is connected to a network analyzer to measure the VSWR. 2. Keeping this jig away from metal at least 20 cm.				
2-3-3Picture					

4-4. Gain and Efficiency

4-4.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

4-4.2 Chamber definition



1. An anechoic chamber (8mx4mx3.5m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

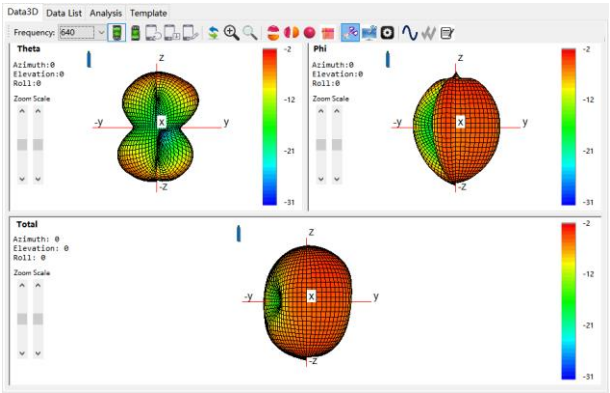
2-4.3 Gain and Efficiency

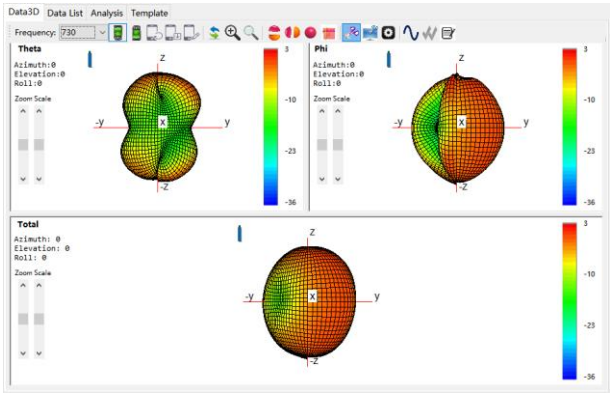
Fre	Effi(db)	Gain(dBi)	Effi(%)	Fre	Effi(db)	Gain(dBi)	Effi(%)
600	-7.17	-4.46	19.18	1710	-0.85	2.88	82.22
610	-6.54	-3.8	22.2	1740	-0.56	3.01	87.86
620	-6.08	-3.25	24.67	1770	-0.66	2.99	85.85
630	-5.65	-2.79	27.22	1800	-0.77	2.5	83.7
640	-5.06	-2.23	31.19	1830	-1	1.86	79.52
650	-4.65	-1.84	34.3	1860	-0.98	1.73	79.8
660	-4.19	-1.26	38.1	1890	-1.06	1.52	78.32
670	-3.91	-0.95	40.61	1920	-1.24	1.28	75.24
680	-3.45	-0.4	45.17	1950	-1.29	1.39	74.34
690	-2.94	0.1	50.78	1980	-1.77	0.81	66.56
700	-1.71	1.41	67.51	2010	-1.97	0.78	63.47

710	-1.67	1.43	68	2040	-2.02	1.17	62.78
720	-1.11	2.17	77.39	2070	-2.18	0.95	60.53
730	-0.96	2.7	80.08	2100	-2.02	1.37	62.74
740	-1.14	2.74	76.97	2130	-2.18	1.09	60.58
750	-1.44	2.72	71.74	2160	-2.05	1.11	62.35
760	-2.39	2.02	57.71	2190	-1.82	1.32	65.79
770	-3.87	1.6	41.07	2220	-1.6	1.61	69.26
780	-5.08	1.25	31.03	2250	-2.4	0.87	57.56
790	-5.19	0.56	30.25	2280	-1.07	2.64	78.21
800	-4.54	0.09	35.16	2310	-0.95	2.85	80.27
810	-4.23	-0.51	37.79	2340	-0.8	3.22	83.17
820	-4.19	-1.06	38.11	2370	-0.8	3.43	83.12
830	-4.37	-1.55	36.59	2400	-2.07	2.04	62.09
840	-5.26	-2.17	29.78	2430	-1.88	2.1	64.94
850	-6.77	-3.05	21.05	2460	-1.58	2.19	69.43
860	-6.48	-3.27	22.47	2490	-1.77	1.96	66.59
870	-5.83	-2.82	26.15	2520	-0.9	2.81	81.24
880	-5.15	-1.83	30.55	2550	-1.12	2.22	77.24
890	-4.82	-1.39	32.99	2580	-1.52	1.74	70.52
900	-4.69	-1.25	34	2610	-1.7	1.37	67.58
910	-4.29	-0.71	37.28	2640	-2.16	0.79	60.85
920	-4.15	-0.49	38.43	2670	-2.47	0.95	56.59
930	-4.21	-0.37	37.92	2690	-3.28	0.7	46.98
940	-4.22	-0.24	37.88				
950	-4.13	0.11	38.64				
960	-4.28	0.06	37.31				

2-5.OTA And Data 3D

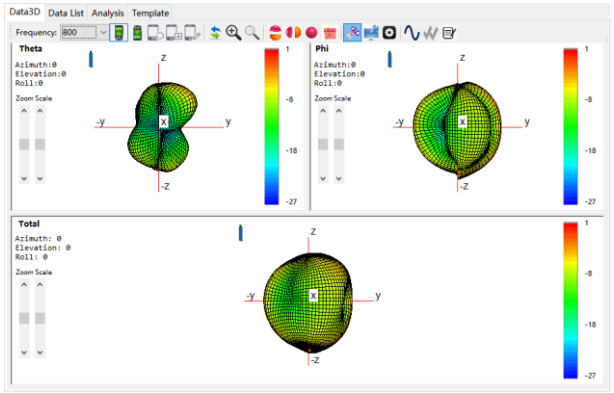
2-5.1 Data 3D



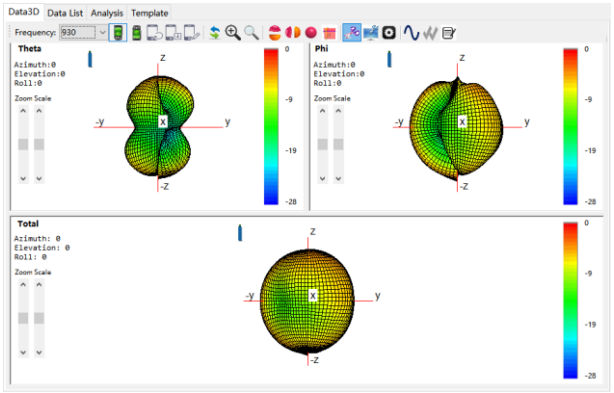


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640 MHz

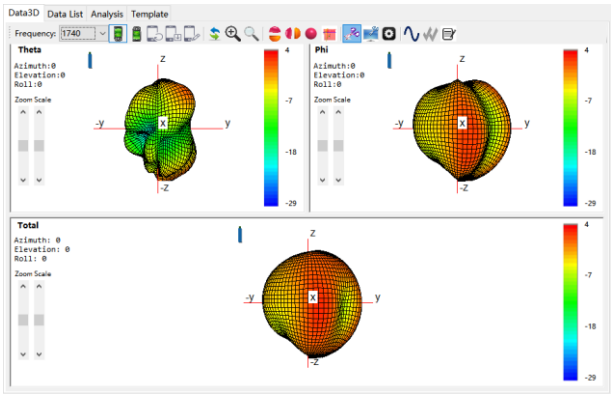


730 MHz

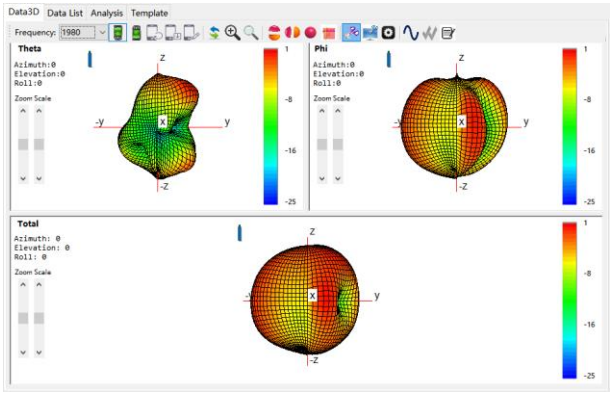


800 MHz

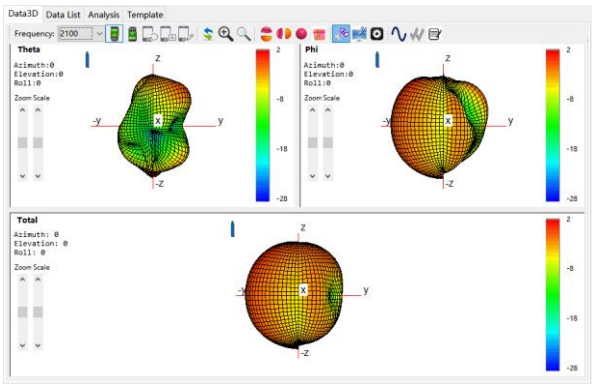
960 MHz



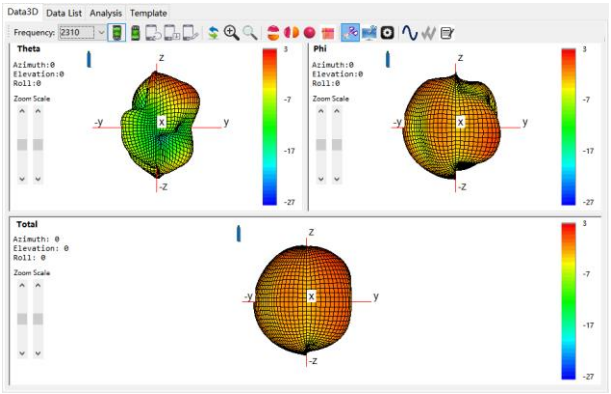
1740 MHz



1980 MHz

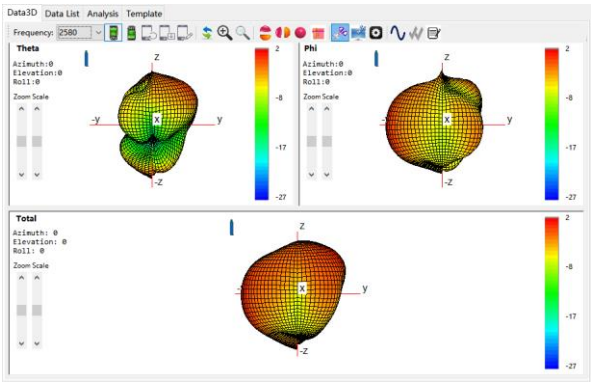


2100 MHz



2310 MHz

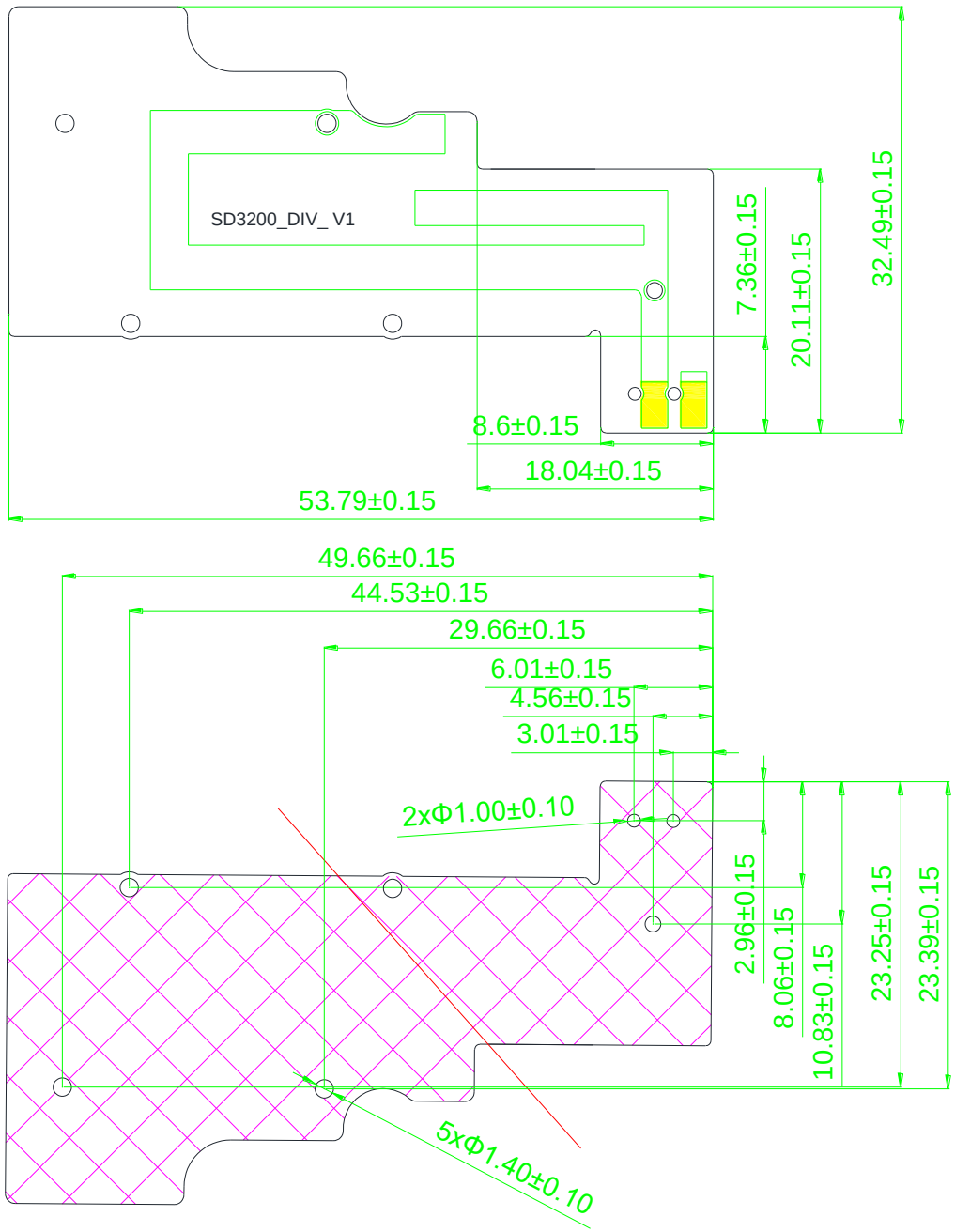
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DESIGNED BY: Eason	APPROVED BY：Jake	
TITLE：WAG-F-LTE12-00-237 Specification	DOCUMENT NO. ENS	PAGE REV. P0



2580 MHz

5.Mechanical Specification:

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DESIGNED BY: Eason	APPROVED BY：Jake		
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DESIGNED BY: Eason	APPROVED BY : Jake	
TITLE: WAG-F-LTE12-00-237 Specification	DOCUMENT NO. ENS	PAGE REV. P0

WAG-F-LTE12-00-236 Specification

1. Explanation of part number :

WAG	_	F	_	LTE12	_	00	_	236
(1)		(2)		(3)		(4)		(5)

(1) Product Type: Wireless Antenna

(2) Material: FPC

(3) Frequency : 617-960/1710-2690MHz

(4) Coaxial Cable Type : 00

(5) Suffix : 236

2. Storage Condition:

Temperature -40 to +85℃
Humidity 20 to 65 %RH
Recommended storage condition:

Store in room condition as listed below: Temperature -20℃~+45ºC, Humidity 80% Max.

3. Operating Condition:

Temperature -40 to +85℃
Humidity 10 to 85 %RH

4. Electrical Specification :

Those specifications were specially defined for Main model, and all characteristics were measured in the customer's machine.

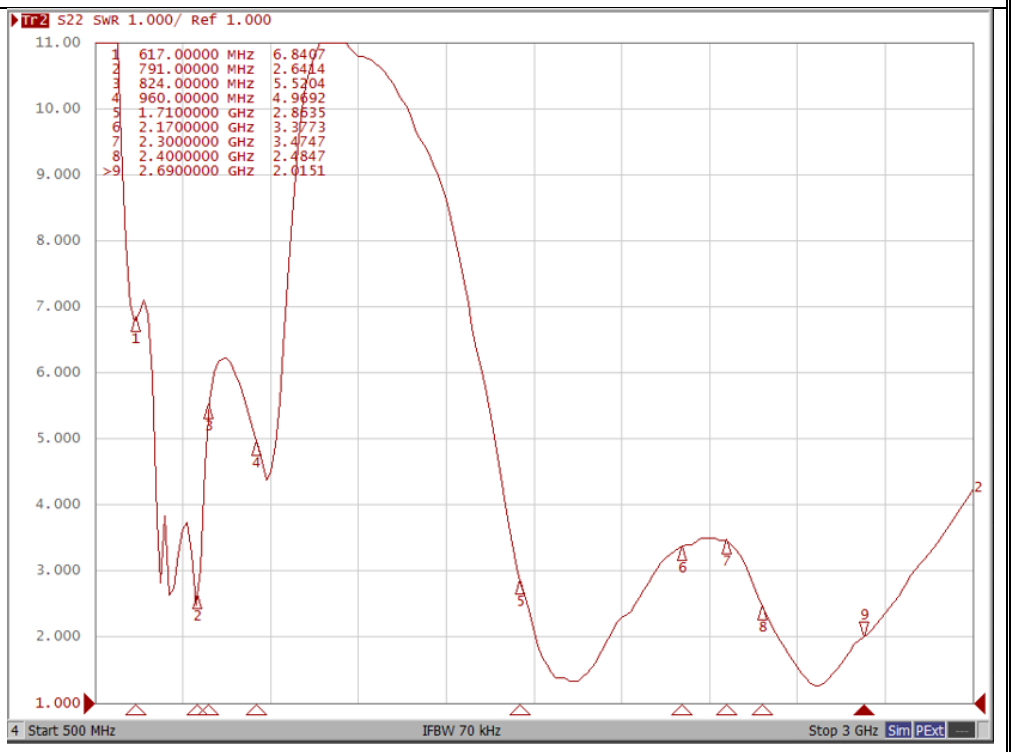
4-1. Frequency Band:

Frequency Band	MHz
Main	617-960/1710-2690MHz

4- 2.Impedance

50 ohm nominal

4-3. VSWR:

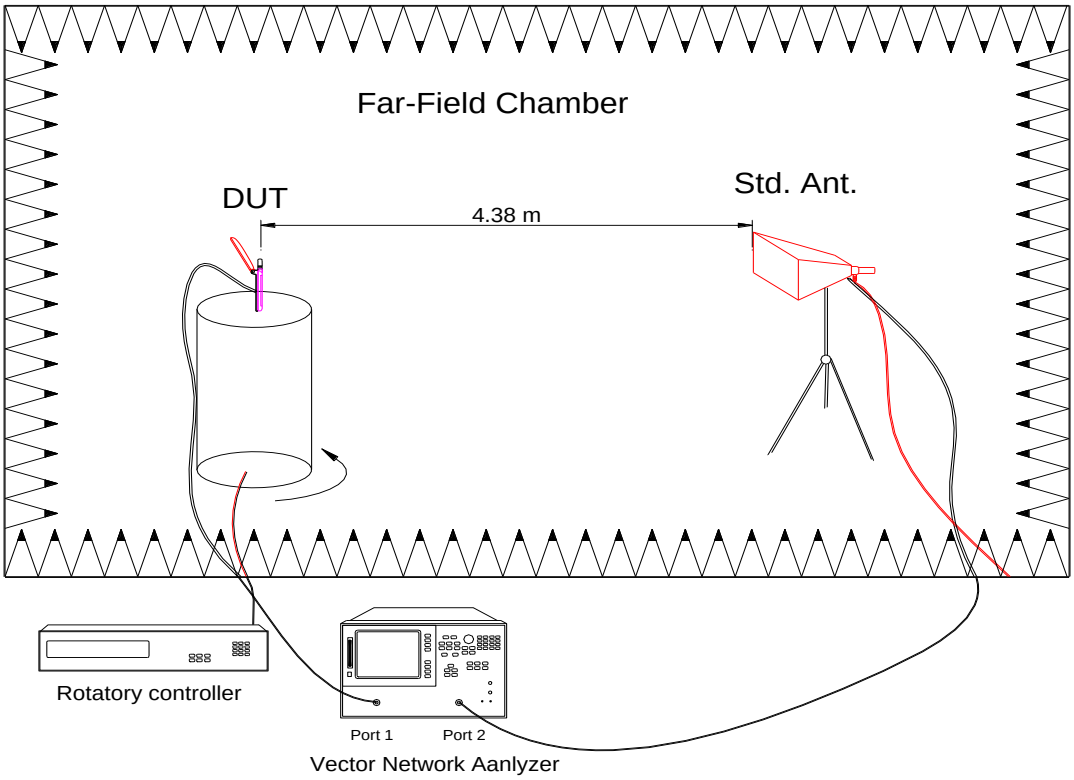
Frequency Band	617	960	1805	2200	2690
2-3-1. Typical Value:	≦8	≦-7	≦4	≦5	≦4
2-3-2Measuring Method	1. A 50Ωcoaxial cable is connected to the fpcb antenna. Then this cable is connected to a network analyzer to measure the VSWR. 2. Keeping this jig away from metal at least 20 cm.				
2-3-3Picture					

4-4. Gain and Efficiency

4-4.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

4-4.2 Chamber definition



1. An anechoic chamber (8mx4mx3.5m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

2-4.3 Gain and Efficiency

Fre	Effi(db)	Gain(dBi)	Effi(%)	Fre	Effi(db)	Gain(dBi)	Effi(%)
600	-11.28	-8.94	7.45	1710	-3.33	0.36	46.43
610	-10.49	-8.07	8.93	1740	-2.05	2.31	62.43
620	-9.68	-7.06	10.77	1770	-1.55	3.12	69.95
630	-8.79	-6	13.22	1800	-1.27	3.12	74.68
640	-8.06	-5.08	15.63	1830	-1.01	3.13	79.2
650	-7.44	-4.32	18.03	1860	-0.65	3.7	86.17
660	-7.3	-3.91	18.63	1890	-0.78	3.69	83.55
670	-8.19	-4.45	15.16	1920	-0.99	3.25	79.6
680	-10.23	-5.75	9.49	1950	-1.07	3.07	78.13
690	-11.95	-7.34	6.39	1980	-1.69	2.46	67.78

700	-9.97	-6.8	10.07	2010	-2.15	1.91	60.98
710	-7.75	-5.22	16.8	2040	-2.39	1.68	57.68
720	-4.87	-2.22	32.56	2070	-2.74	1.49	53.19
730	-3.18	-0.14	48.12	2100	-2.99	1.11	50.23
740	-2.16	0.47	60.75	2130	-3.35	0.5	46.22
750	-1.23	1.27	75.26	2160	-3.55	0.33	44.2
760	-0.7	1.66	85.04	2190	-3.41	0.53	45.65
770	-0.53	1.86	88.49	2220	-3.17	0.34	48.22
780	-0.68	1.78	85.58	2250	-3.95	-0.69	40.23
790	-0.94	1.62	80.62	2280	-2.67	0.51	54.06
800	-1.19	1.35	76.01	2310	-2.68	0.3	53.92
810	-1.75	0.89	66.8	2340	-2.35	0.21	58.18
820	-2.52	0.39	56.01	2370	-2.14	0.17	61.13
830	-3.63	-0.32	43.36	2400	-3.33	-0.89	46.46
840	-5.57	-3	27.71	2430	-2.82	-0.18	52.19
850	-5	-2.03	31.62	2460	-2.41	0.31	57.42
860	-4.67	-2.33	34.15	2490	-2.19	1.01	60.4
870	-4.98	-2.94	31.77	2520	-1.18	2.65	76.23
880	-4.97	-2.88	31.84	2550	-1.32	2.85	73.77
890	-5.15	-2.93	30.56	2580	-1.47	2.73	71.34
900	-5.39	-3.26	28.88	2610	-1.53	3.1	70.23
910	-5.29	-3.12	29.56	2640	-1.8	2.72	66.01
920	-5.35	-3.16	29.19	2670	-2.06	2.05	62.2
930	-5.5	-3.27	28.2	2690	-2.88	0.98	51.58
940	-5.6	-3.38	27.54				
950	-5.46	-3.16	28.44				
960	-5.54	-2.92	27.93				

2-5.OTA And Data 3D

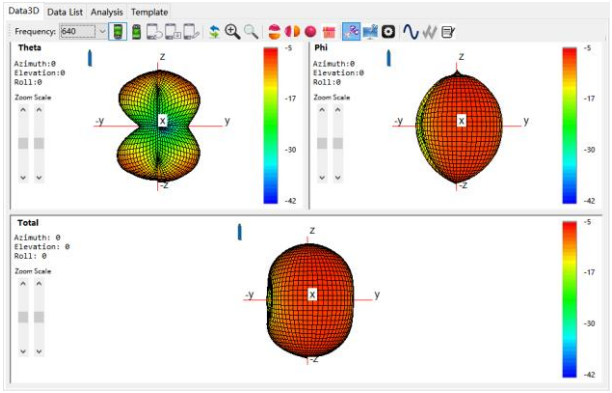
2-5.1 OTA And Boom/Switch

1、OTA

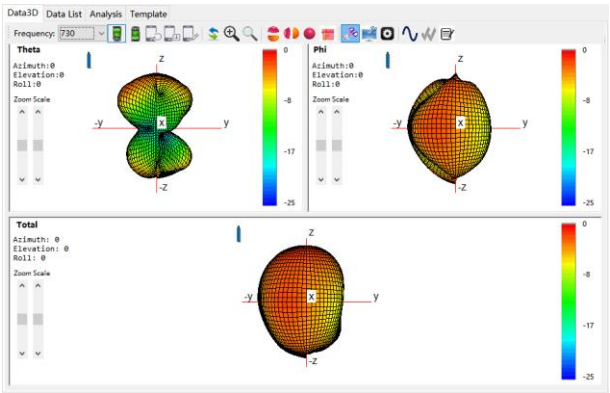
Band	Channel Bandwidth (MHz)	Channel	FS		Band	Channel Bandwidth (MHz)	Channel	FS	
			TRP	TIS				TRP	TIS
Band 2	10M	18650	18.37	-96.27	Band 14	10M			
		18900	18.4	-96.76			23330	21.75	-96.96
		19150	18.15	-97.74					
Band4	10M	20000	18.15	-95.72	Band 25	5M	26065	17.89	-97.68
		20175	18.52	-96.99			26365	18.02	-97.63
		20350	19.14	-96.2			26665	17.71	-98.03

Band66	10M	132022	18.58	-95.66	Band 26	5M	26715	20.76	-97.66
		132322	19.56	-96.42			26865	19.75	-97.04
		132622	19.64	-96.43			27015	18.93	-97.57
Band5	10M	20450	19.7	-94.9	Band30	10M			
		20525	19.01	-95.34			27710	18.36	-98.1
		20600	18.2	-95.03					
Band 7	10M	20850	17.97	-97.74	Band71	10M	133172	18.99	-95.83
		21100	18.45	-97.56			133297	20.23	-96.25
		21350	18.48	-97.33			133422	20.58	-95.9
Band 12	5M	23035	21.02	-99.27	Band 41	20M	40340	18.36	-93.31
		23095	21.47	-99.15			40620	18.54	-92.67
		23155	21.25	-99.43			41140	18.37	-93.6
Band 13	10M								
		23230	21.41	-94.47					

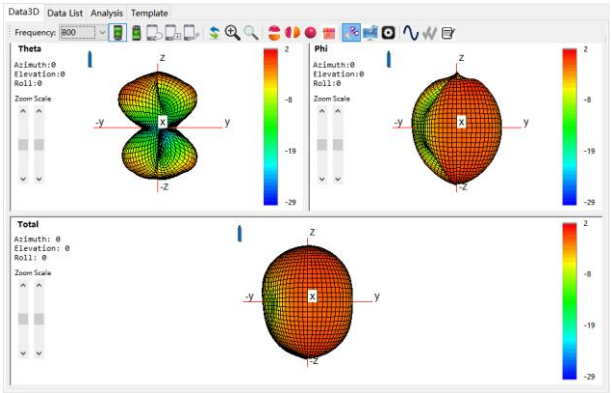
2-5.2 Data 3D



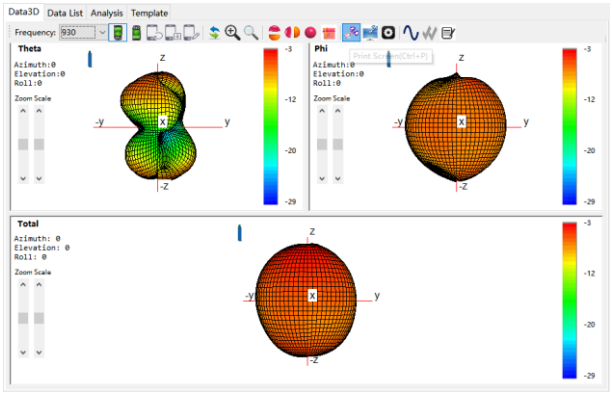
640 MHz



730 MHz

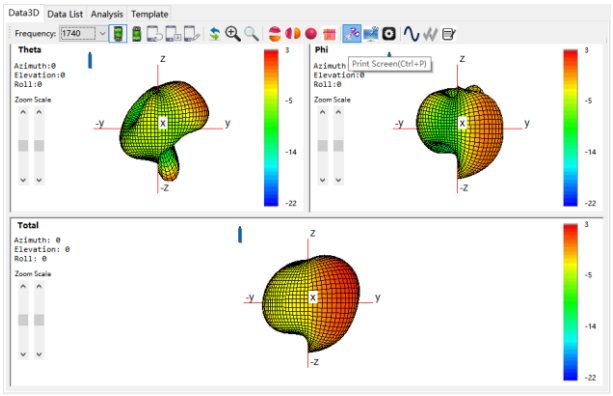


800 MHz

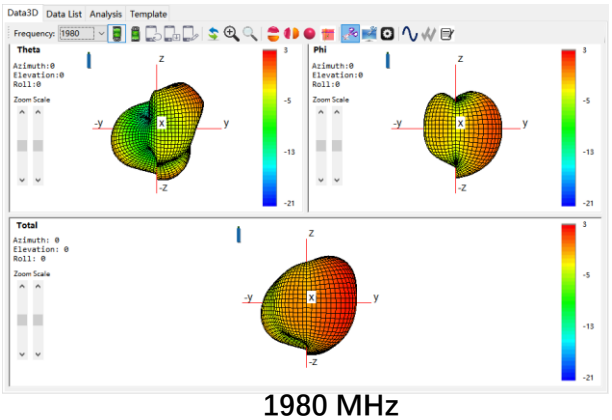


960 MHz

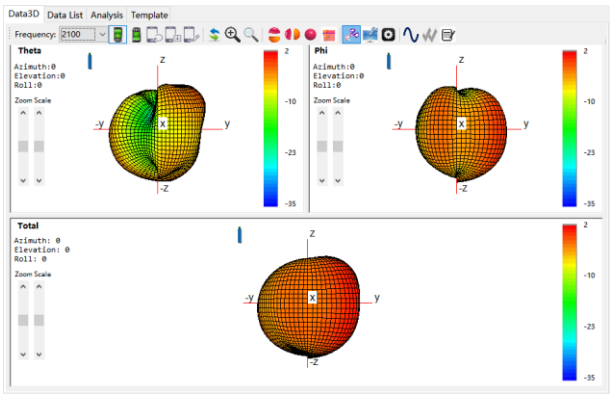
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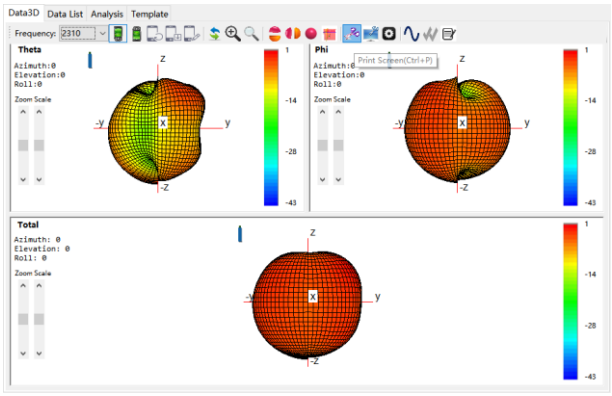
1740 MHz



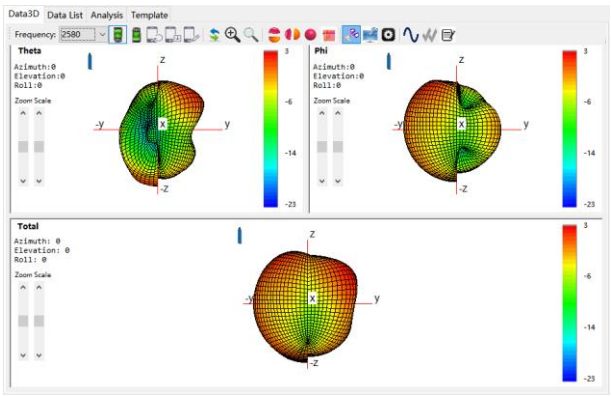
1980 MHz



2100 MHz



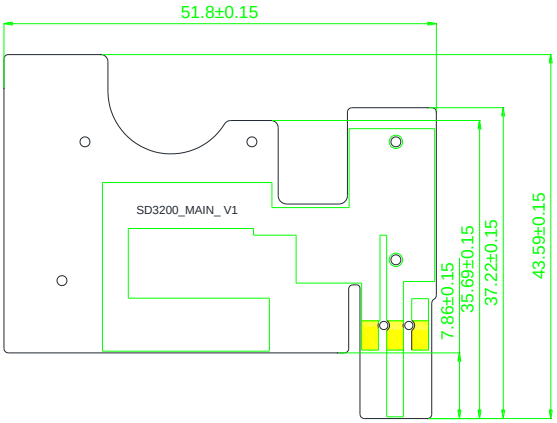
2310 MHz

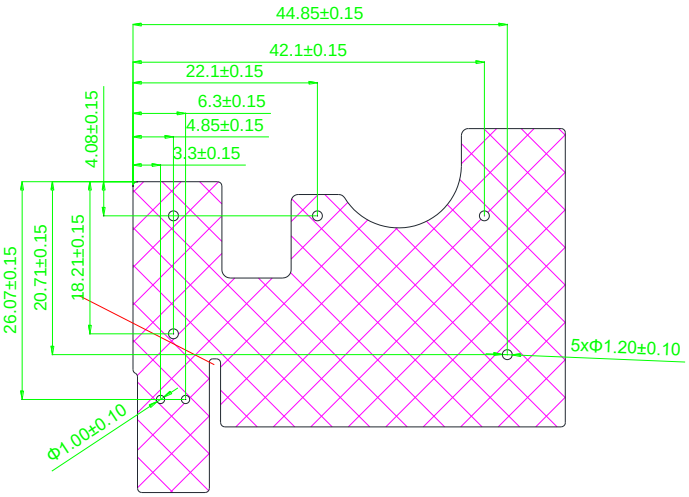


2580 MHz

5.Mechanical Specification:

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DESIGNED BY: Eason	APPROVED BY：Jake	
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