

# The BWG Antenna Sample Confirmation

File number: SNW-QR-D-007/A.0

Customer	SHENZHEN ALONG ELECTRONICS CO., LTD.		
Project Name	K23 (ALTTAN)		2023-12-27
		Date	
Project NO.	SN1131		FPC
		Notes	
Frequency Range	BT/WIFI (2.4G/5G)/GPS		

Designer: SINAWELL Electronics(Shenzhen) Co., Ltd.

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## Catalogue

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1. Overview of specifications

This specification describes the status of K23 built-in antenna, and its frequency band is BT/WIFI/GPS.

2. Antenna appearance



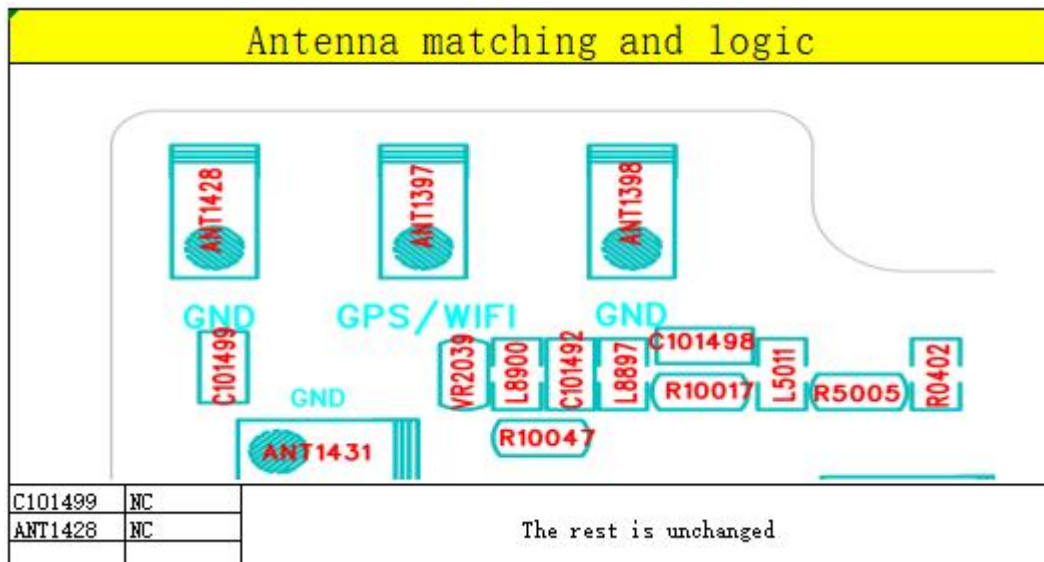
3. Electrical performance

3.1. Antenna frequency band

	Antenna
Transmitting frequency band(MHz)	BT/WIFI(2.4G/5G)/GPS

3.2. Matching circuit

The test point is behind the antenna connector (RF test port), as shown in the figure below.  
Note: the antenna matching electronic material should be 1% accurate.



#### 4. Appearance structure

##### 4.1 Antenna material

FPC

#### 5. Remarks

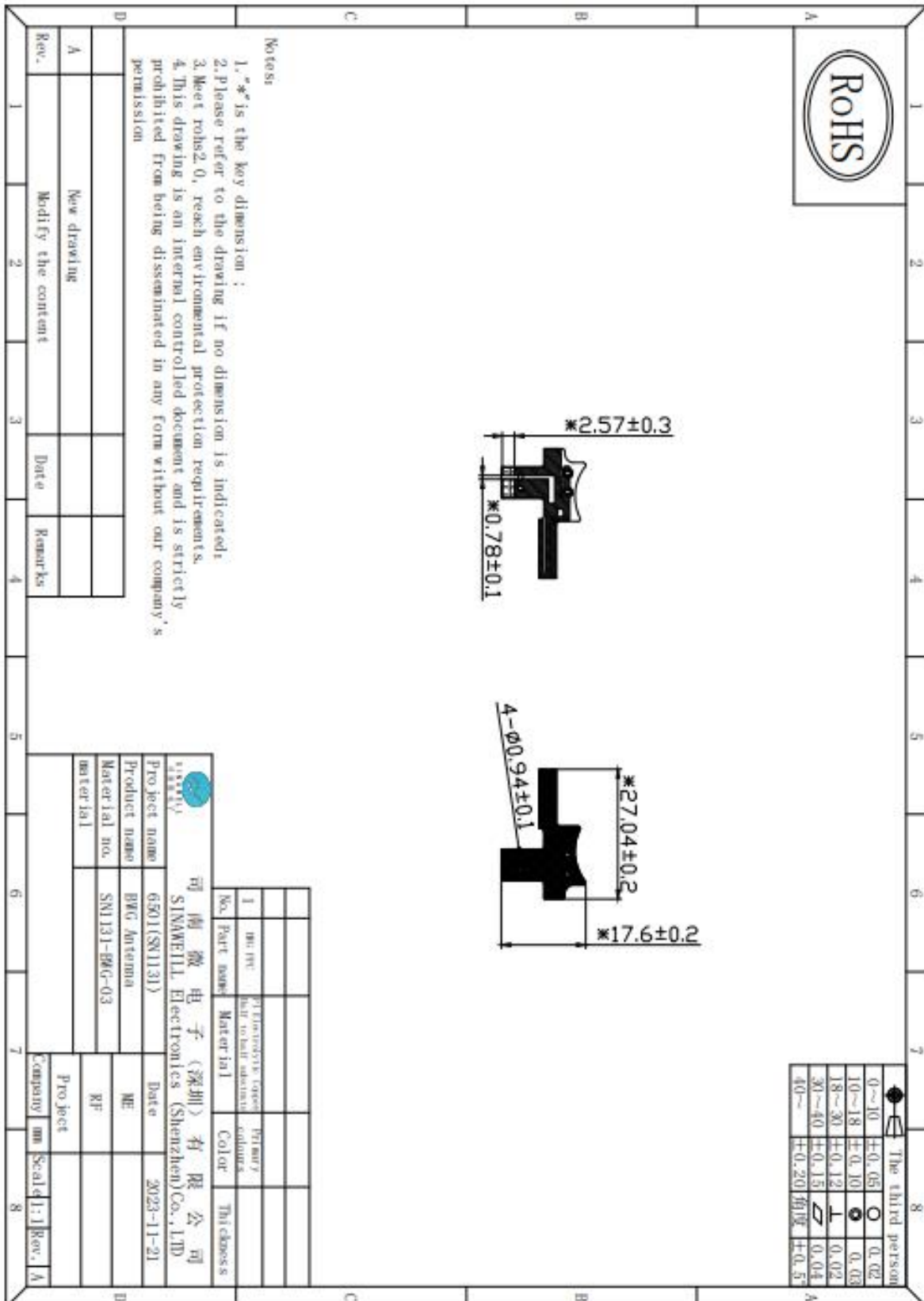
The following table format

Appendix I: structural drawings  
BT Antenna structure drawing

Appendix 1: Structural Drawings

Appendix II: Electrical Performance Test Report

Appendix 1: FPC structural drawings



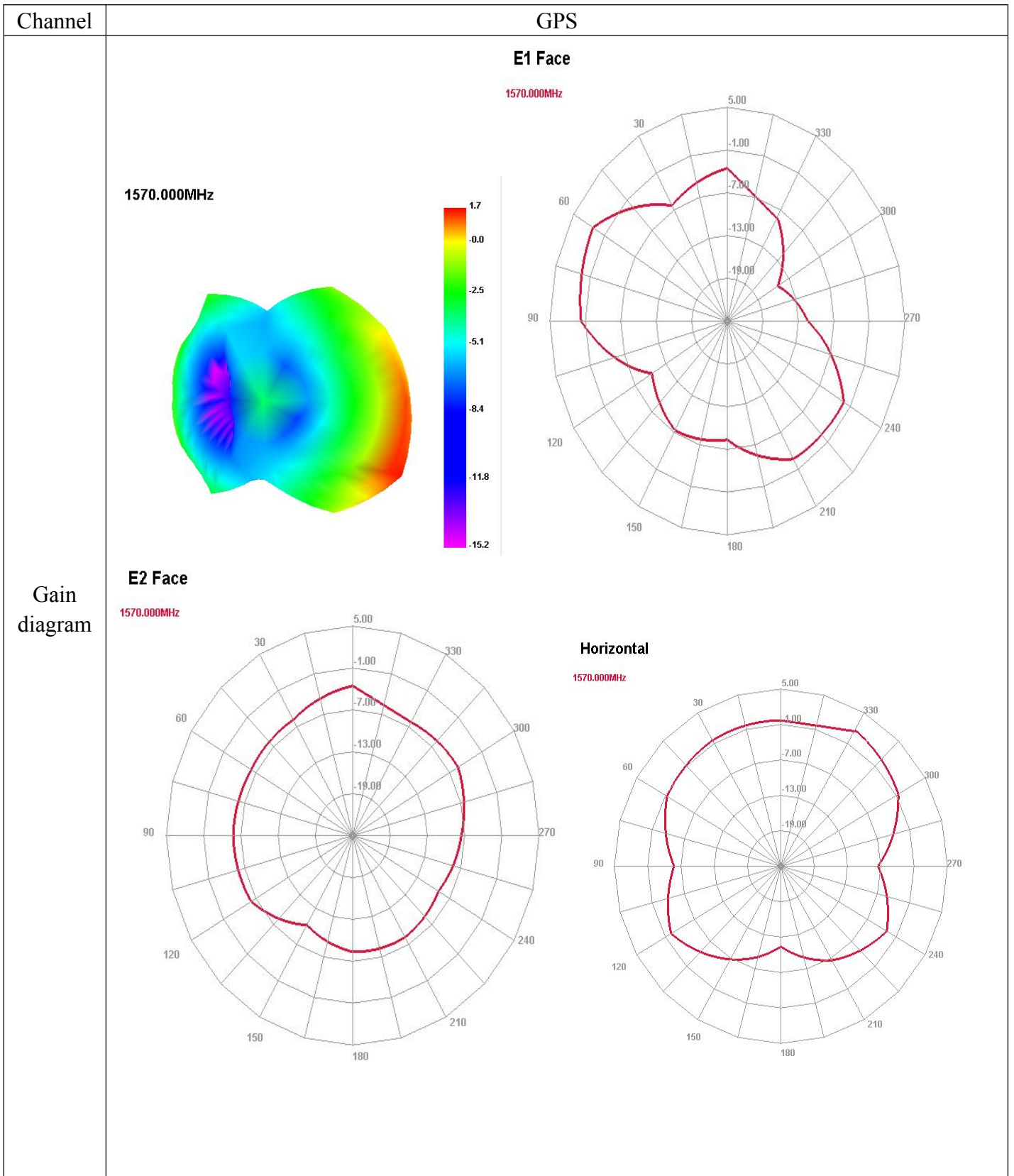
## Appendix II: 3D Test Report

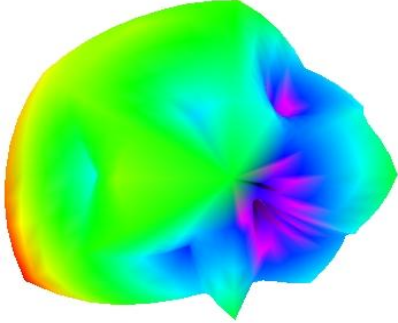
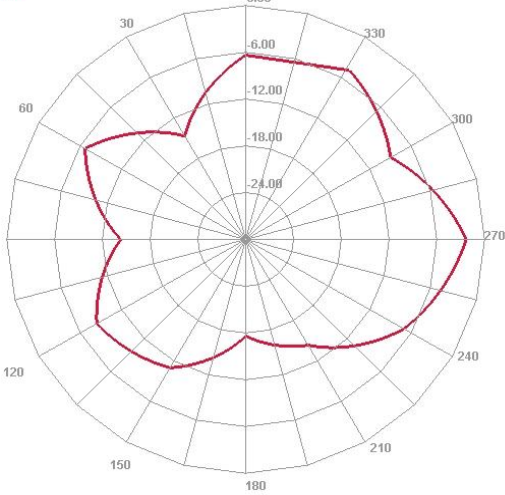
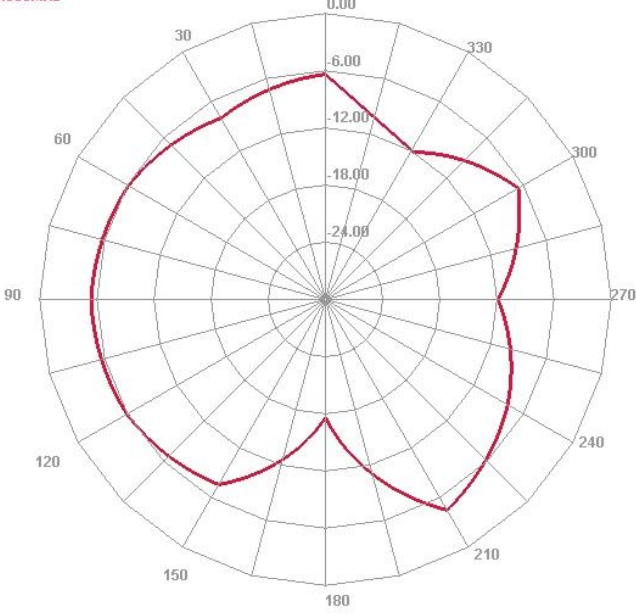
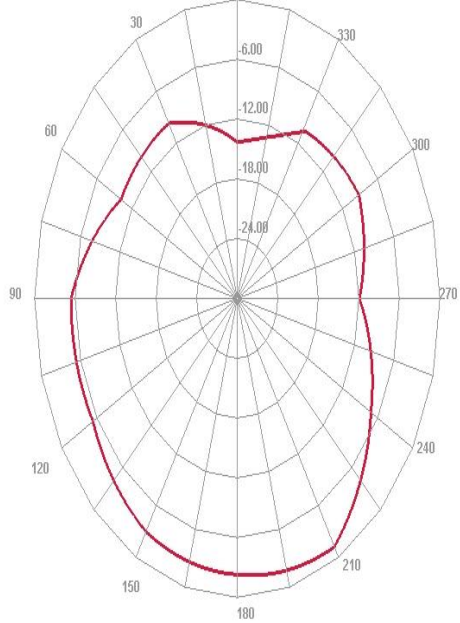
WIFI-2.4G	Data Rate	Channel	TRP (dBm)	TIS (dBm)
11B	11M	1	11.06	-78.6
		6	11.74	-80.11
		11	11.87	-81.52
WIFI-5G	Data Rate	Channel	TRP (dBm)	TIS (dBm)
11A	54M	40	7.1	-68.41
		56	8.05	-68.66
		157	6.12	-66.02
GPS	Channel		CN (dBm)	TIS (dBm)
GPS	0		40.87	-153.67

## Passive efficiency

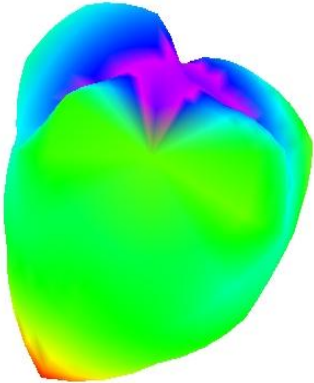
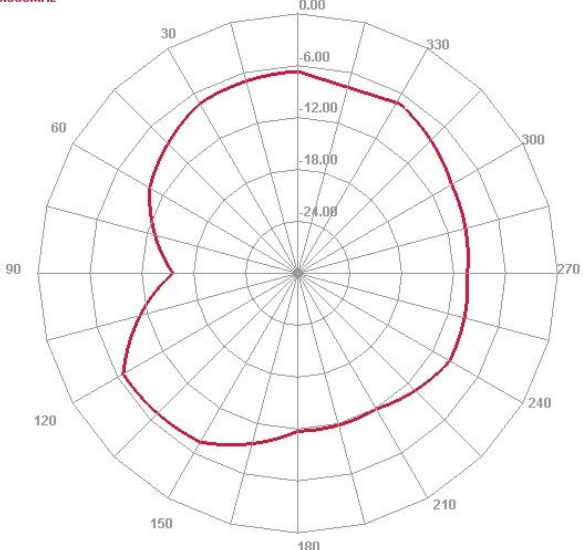
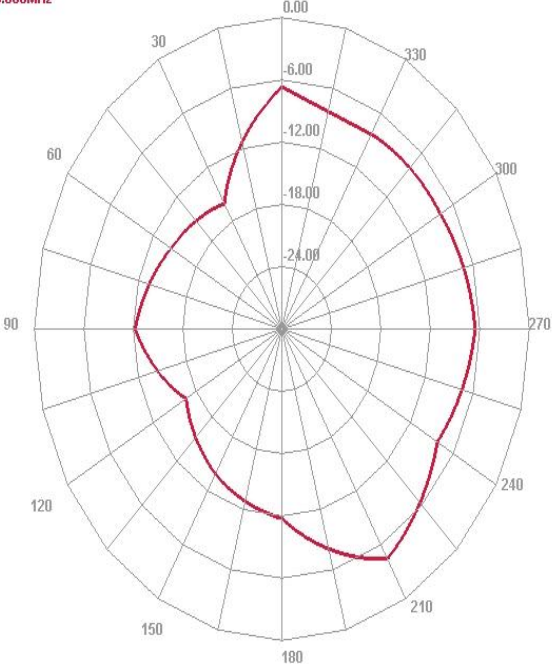
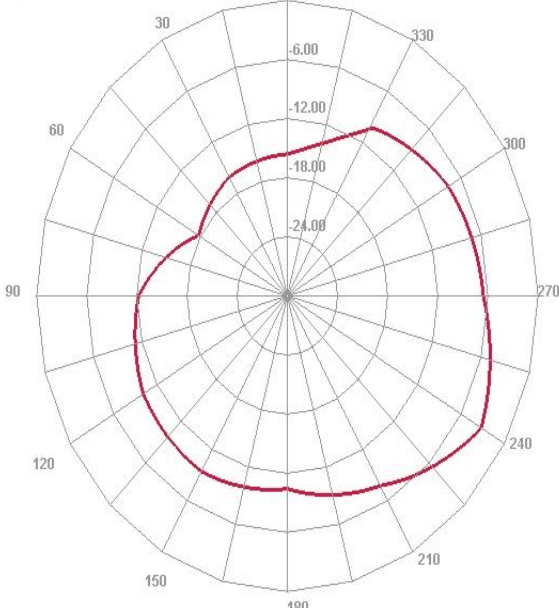
GPS				BT/WIFI-2.4				WIFI-5G			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
1550	52.42	-2.8	1.97	2400	24.24	-6.16	-0.9	5150	11.67	-9.33	-3.2
1560	50.79	-2.94	1.99	2410	25.75	-5.89	-0.68	5175	16.65	-7.78	-1.79
1570	46.04	-3.37	1.68	2420	25.52	-5.93	-0.67	5200	14.94	-8.26	-2.21
1580	39.4	-4.04	1.03	2430	26.1	-5.83	-0.42	5225	17.47	-7.58	-1.3
1590	37.82	-4.22	0.94	2440	24.83	-6.05	-0.44	5250	22.26	-6.53	-0.41
1600	39.38	-4.05	0.88	2450	22.64	-6.45	-0.68	5275	20.19	-6.95	-0.83
				2460	22.39	-6.5	-0.57	5300	16.05	-7.95	-1.99
				2470	23.38	-6.31	-0.46	5325	21.93	-6.59	-0.68
				2480	23.71	-6.25	-0.59	5350	13.32	-8.76	-3.23
				2490	22.74	-6.43	-0.74	5375	15.67	-8.05	-1.7
				2500	20.2	-6.95	-1.1	5400	20.49	-6.88	-0.7
								5425	16.08	-7.94	-1.66
								5450	15.37	-8.13	-2.2
								5475	17.08	-7.67	-1.62
								5500	11.68	-9.33	-3.18
								5525	15.94	-7.98	-1.84
								5550	17.25	-7.63	-1.78
								5575	17.36	-7.6	-1.81
								5600	17.68	-7.52	-1.7
								5625	19.08	-7.19	-1.32
								5650	16.31	-7.88	-1.89
								5675	18.45	-7.34	-1.41
								5700	19.27	-7.15	-1.2
								5725	16.88	-7.73	-2.36
								5750	19.21	-7.16	-1.63
								5775	22.04	-6.57	-0.84
								5800	16.65	-7.78	-2.15
								5825	22.17	-6.54	-0.89
								5850	20.54	-6.87	-1.18

Field intensity pattern



Channel	BT/WIFI-2.4G
Gain diagram	<p data-bbox="263 383 406 409"><b>2400.000MHz</b></p>  <p data-bbox="879 344 959 371"><b>E1 Face</b></p> <p data-bbox="868 387 948 409">2400.000MHz</p> 
	<p data-bbox="277 949 373 976"><b>E2 Face</b></p> <p data-bbox="263 1001 359 1023">2400.000MHz</p>  <p data-bbox="963 934 1043 960"><b>Horizontal</b></p> <p data-bbox="952 985 1032 1008">2400.000MHz</p> 



Channel	WIFI-5G
Gain diagram	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>5150.000MHz</b></p>  </div> <div style="width: 50%;"> <p><b>E1 Face</b></p> <p>5150.000MHz</p>  </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p><b>E2 Face</b></p> <p>5150.000MHz</p>  </div> <div style="width: 50%;"> <p><b>Horizontal</b></p> <p>5150.000MHz</p>  </div> </div>