

The BWG Antenna Sample Confirmation

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

Customer	SHENZHEN ALONG ELECTRONICS CO., LTD.		
Project Name	5510		2024-9-28
		Date	
Project NO.	SN1233		FPC
		Notes	
Frequency Range	BT/WIFI (2. 4G/5G) /GPS		
Designed By	RF Engineer	Structural Engineer	
Checked By	Engineering Manager		
Client' s Approval			

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

Add: 712-717, Block A Jinfulai Building,49-1 Dabao Road,Xinan 28th area,Baoan District,Shenzhen,China

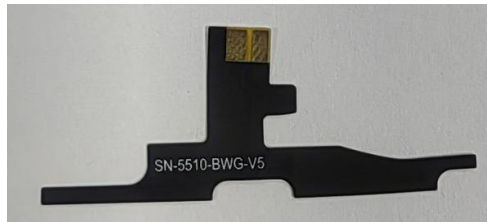
Catalogue

front cover.....	1
catalogue.....	2
1. Overview of specification	3
2. FPC Antenna appearance	3
3. electrical property	3
3.1. Antenna frequency band	3
3.2. matching circuit	3
4. Appearance structure	4
4.1. FPC Antenna material	4
5. Remarks	4
6.Appendix I (Structural Drawings)	5
7.Appendix II (3D Test Report)	6、7、8

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



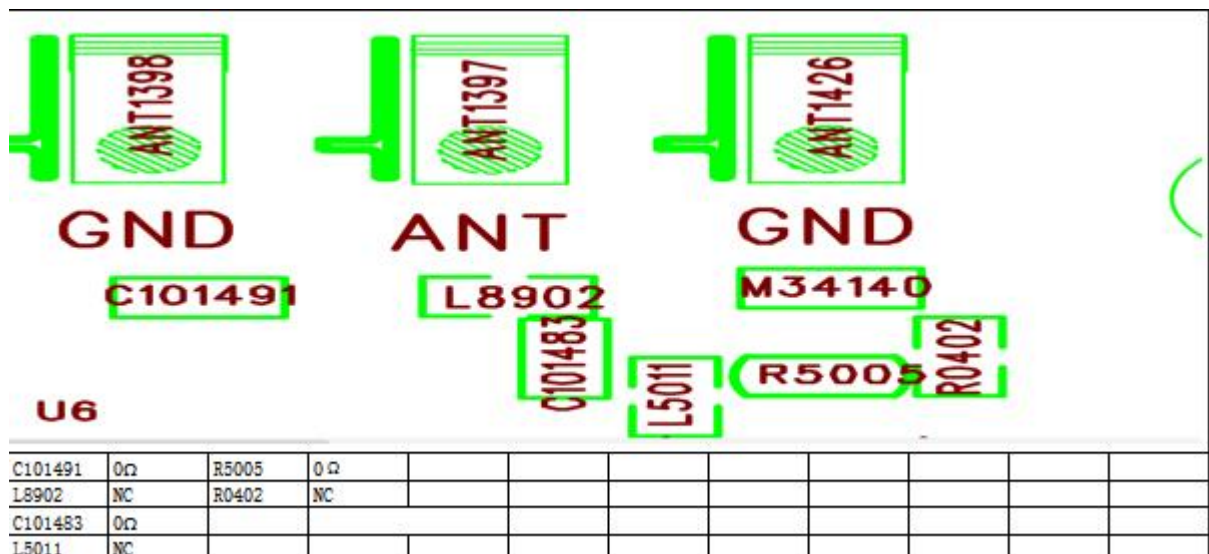
3. Electrical performance

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

1	2	3	4	5	6	7	8																								
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<table border="1" style="width: 100%; font-size: 8px;"> <tr> <td>1</td> <td>BWG FPC</td> <td>PI Electrolytic Copper Half to half substrate</td> <td>Yellow</td> <td></td> </tr> <tr> <th>No.</th> <th>Part name</th> <th>Material</th> <th>Color</th> <th>Thickness</th> </tr> </table>								1	BWG FPC	PI Electrolytic Copper Half to half substrate	Yellow		No.	Part name	Material	Color	Thickness														
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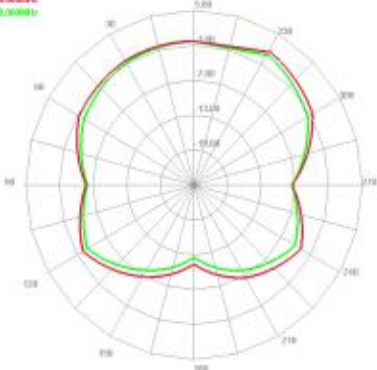
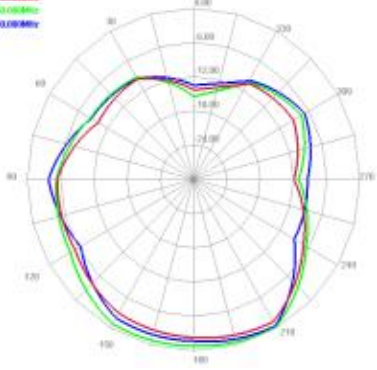
Appendix II: 3D Test Report

2.4G	Data Rate	Channel	TRP	TIS
11B	11M	1	12.21	-80.17
		7	12.54	-80.41
		13	12.47	-80.35
5G	Data Rate	Channel	TRP	TIS
11A	54M	40	7.57	-68.92
		56	8.48	-69.02
		157	9.26	-69.76
GPS	Channel		CN	TIS
GPS	0		42.33	-152.23

Passive efficiency

GPS				2.4G				5.8G			
Freq (MHz)	Effi (dB)	Gain (dBi)	Effi (%)	Freq (MHz)	Effi (dB)	Gain (dBi)	Effi (%)	Freq (MHz)	Effi (dB)	Gain (dBi)	Effi (%)
1500	-4.88	-1.52	32.52	2400	-4.44	-0.48	35.96	5200	-5.4	-0.57	28.81
1510	-4.67	-1.21	34.12	2410	-4.28	-0.3	37.35	5220	-5.49	-0.76	28.22
1520	-4.62	-1.34	34.5	2420	-4.18	-0.24	38.24	5240	-5.51	-0.81	28.12
1530	-4.56	-1.26	34.99	2430	-4.18	-0.17	38.16	5260	-5.54	-1.16	27.9
1540	-4.53	-1.3	35.24	2440	-4.28	-0.25	37.29	5280	-5.53	-1.4	27.96
1550	-4.52	-1.3	35.28	2450	-4.43	-0.43	36.05	5300	-5.68	-1.63	27.05
1560	-4.82	-1.5	32.93	2460	-4.24	-0.26	37.65	5320	-5.87	-1.93	25.89
1570	-4.84	-1.52	32.85	2470	-4.17	-0.19	38.25	5340	-6.14	-2.39	24.31
1580	-4.76	-1.46	33.42	2480	-4.39	-0.04	36.39	5360	-6.41	-2.5	22.87
1590	-4.7	-1.38	33.91	2490	-4.38	-0.08	36.44	5380	-6.5	-2.19	22.37
1600	-4.8	-1.37	33.13	2500	-4.41	-0.13	36.2	5400	-6.56	-1.86	22.08
								5420	-6.74	-1.72	21.18
								5440	-6.57	-1.31	22.01
								5460	-6.66	-1.35	21.56
								5480	-6.73	-1.57	21.21
								5500	-6.45	-1.51	22.65
								5520	-6.67	-2.17	21.53
								5540	-6.76	-2.59	21.09
								5560	-6.48	-2.53	22.5
								5580	-6.79	-2.84	20.95
								5600	-6.53	-2.3	22.25
								5620	-6.65	-2	21.63
								5640	-6.66	-1.65	21.56
								5660	-6.3	-0.93	23.45
								5680	-6.73	-1.1	21.21
								5700	-6.48	-0.87	22.47
								5720	-6.39	-0.96	22.99
								5740	-6.44	-1.49	22.71
								5760	-6.33	-1.74	23.3
								5780	-6.63	-2.09	21.7
								5800	-6.52	-1.78	22.3

Field intensity pattern

Channel	GPS	BT/WIFI-2.4G	WIFI-5.8G
Gain diagram	Horizontal 1578.00MHz 1580.00MHz 	Horizontal 2400.00MHz 2450.00MHz 2500.00MHz 	Horizontal 5150.00MHz 5250.00MHz 5700.00MHz 