

The Main 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	2G: GSM850/PCS1900 3G: W2/W5 4G: B2/B3/B4/B5/B7/B12/B17/B66/B71		
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

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1. Overview of specifications

This specification describes the status of 5510 built-in antenna, and its frequency band is 4G.

2. Antenna appearance



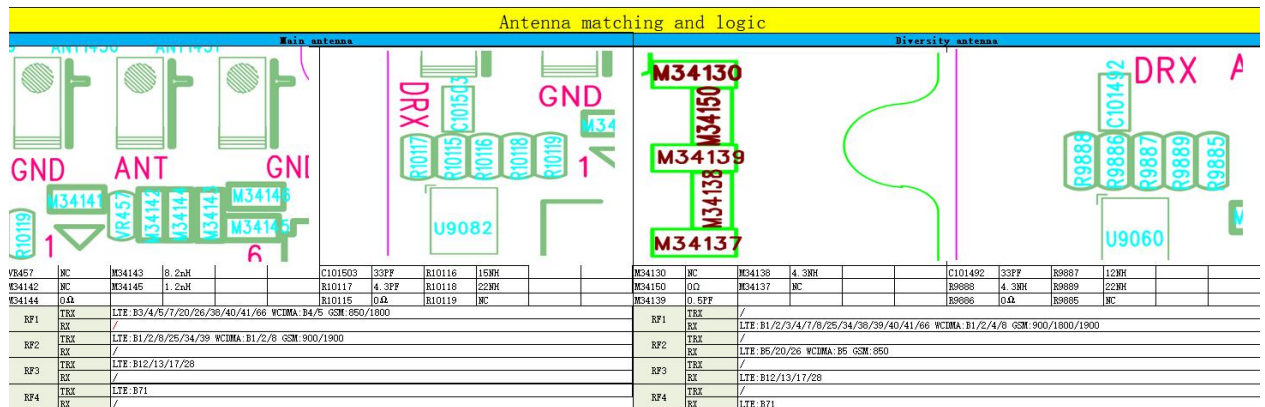
3. Electrical performance

3.1. Antenna frequency band

	Main antenna
Transmitting frequency band(MHz)	2G:GSM850/PCS1900 3G:W2/W5 4G:B2/B3/B4/B5/B7/B12/B17/B66/B71

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

Remarks

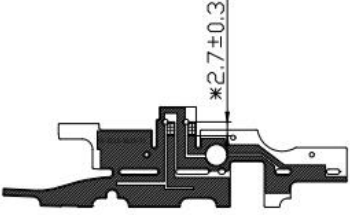
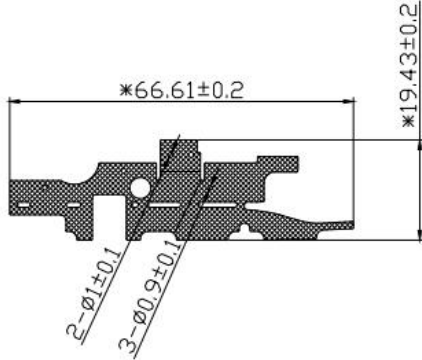
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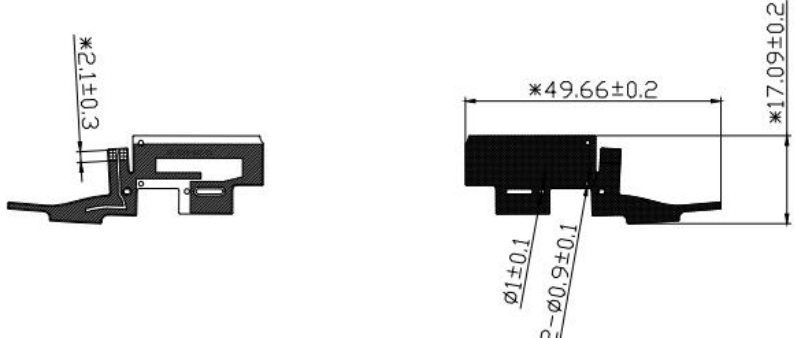
Appendix I: structural drawings
BT Antenna structure drawing

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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Notes: 1. "*" is the key dimension ; 2. Please refer to the drawing if no dimension is indicated; 3. Meet rohs2.0, reach environmental protection requirements. 4. This drawing is an internal controlled document and is strictly prohibited from being disseminated in any form without our company's permission <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>1</td> <td>MAIN 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	MAIN FPC	PI Electrolytic Copper Half to half substrate	Yellow		No.	Part name	Material	Color	Thickness																						
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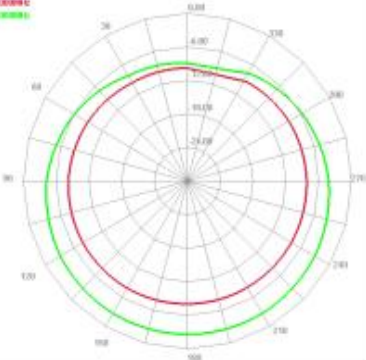
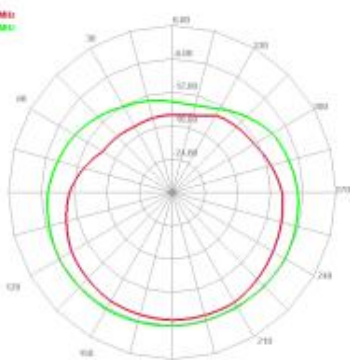
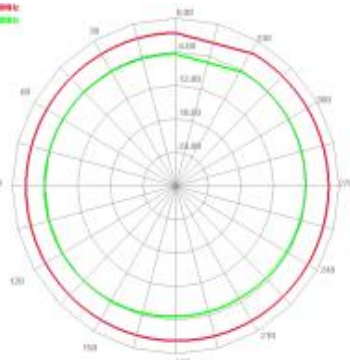
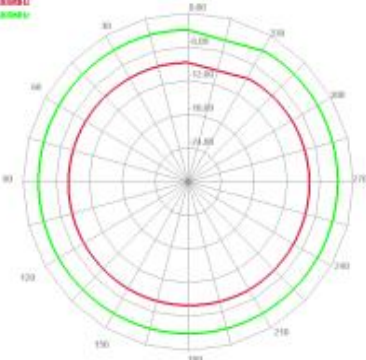
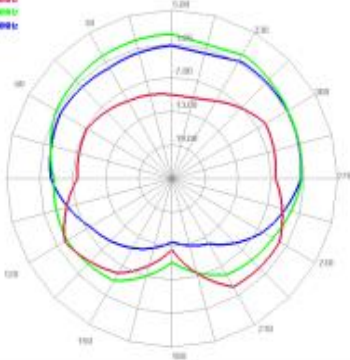
Appendix II: 3D Test Report

B2 (10M)	18650	16.49			850	128	25.23		
	18900	16.26				190	25.68		
	19150	16.38	1150	-94.54		251	25.47	251	-96.09
B3 (10M)	19250	16.14			1900	512	23.87		
	19575	16.85				661	23.34		
	19900	16.89	1900	-90.46		810	23.52	810	-103.57
B4 (10M)	20000	16.27			W2	9262	16.18		
	20175	16.45				9400	16.93		
	20350	17.03	2350	-94.21		9538	16.2	9938	-105.24
B5 (10M)	20450	17			W5	4132	17.18		
	20525	17.1				4183	17.14		
	20600	16.21	2600	-91.79		4233	16.47	4458	-106.02
B7 (10M)	20850	16.17							
	21100	16.46							
	21350	16.12	3350	-93.19					
B12 (5M)	23035	15.24							
	23095	15.58							
	23155	15.85	5155	-91.75					
B17 (5M)	23780	15.37							
	23790	15.5							
	23800	15.8	5800	-91.82					
B66 (10M)	132022	16.14							
	132322	16.72							
	132622	16.94	67086	-93.72					
B71 (10M)	133172	15.52							
	133297	16.14							
	133422	15.59	68886	-90.05					

Passive efficiency

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
600	8.08	-10.93	-8.45	1710	25.82	-5.88	-1.63	2490	35.9	-4.45	-0.11
610	10.06	-9.97	-7.84	1720	29.56	-5.29	-0.95	2500	35.16	-4.54	-0.05
620	12.72	-8.95	-6.66	1730	30.65	-5.14	-1.05	2510	39.28	-4.06	0.54
630	16.39	-7.85	-4.97	1740	31.65	-5	-0.98	2520	41.88	-3.78	0.6
640	19.03	-7.21	-3.77	1750	35.74	-4.47	-0.69	2530	43.8	-3.59	0.78
650	18.78	-7.26	-3.22	1760	39.75	-4.01	-0.63	2540	40.55	-3.92	0.37
660	15.92	-7.98	-3.66	1770	39.65	-4.02	-0.73	2550	37.88	-4.22	-0.09
670	15.9	-7.99	-3.63	1780	43.15	-3.65	-0.28	2560	39.2	-4.07	-0.03
680	16.92	-7.72	-3.4	1790	46.18	-3.36	0.05	2570	41.69	-3.8	0.05
690	22.32	-6.51	-2.29	1800	46.59	-3.32	0.11	2580	43.39	-3.63	0.28
700	20.51	-6.88	-2.78	1810	49.67	-3.04	0.31	2590	39.03	-4.09	-0.16
710	24.3	-6.14	-2	1820	49.46	-3.06	0.14	2600	38.24	-4.17	-0.01
720	21.19	-6.74	-2.89	1830	48.78	-3.12	-0.05	2610	40.53	-3.92	0.32
730	18.62	-7.3	-3.87	1840	49.14	-3.09	-0.23	2620	40.69	-3.91	0.26
740	18.08	-7.43	-4.7	1850	54.04	-2.67	0	2630	40.77	-3.9	0.54
750	16.88	-7.73	-5.6	1860	55	-2.6	0.12	2640	41.57	-3.81	0.8
760	18.38	-7.36	-4.84	1870	56.1	-2.51	0.63	2650	38.44	-4.15	0.72
770	17.68	-7.53	-4.93	1880	53.66	-2.7	0.49	2660	38.43	-4.15	0.79
780	16.79	-7.75	-5.16	1890	54.79	-2.61	0.72	2670	41.06	-3.87	1.18
790	19.24	-7.16	-4.59	1900	57.97	-2.37	1.25	2680	40.79	-3.89	1.23
800	19.14	-7.18	-4.65	1910	54.2	-2.66	0.99	2690	39.5	-4.03	1.21
810	17.61	-7.54	-4.88	1920	52.87	-2.77	1.12				
820	15.34	-8.14	-5.34	1930	52.51	-2.8	1.37				
830	20.34	-6.92	-3.84	1940	51.91	-2.85	1.31				
840	23.97	-6.2	-2.92	1950	56.99	-2.44	2				
850	22.15	-6.55	-3.19	1960	60.03	-2.22	2.41				
860	24.26	-6.15	-2.78	1970	58.09	-2.36	2.51				
870	30.26	-5.19	-1.82	1980	56.13	-2.51	2.67				
880	16.67	-7.78	-3.67	1990	62.43	-2.05	3.17				
890	20.45	-6.89	-2.64	2000	57.45	-2.41	2.77				
900	25	-6.02	-1.7	2010	59.74	-2.24	3.15				
910	27.15	-5.66	-1.34	2020	58.91	-2.3	3.12				
920	32.11	-4.93	-0.5	2030	60.49	-2.18	3.43				
930	29.69	-5.27	-0.85	2040	61.38	-2.12	3.57				
940	28.54	-5.44	-1.07	2050	58.38	-2.34	3.42				
950	22.65	-6.45	-2.14	2060	56.59	-2.47	3.27				
960	15.98	-7.97	-3.67	2070	53.44	-2.72	3.12				
				2080	49.98	-3.01	2.85				
				2090	49.23	-3.08	2.96				
				2100	44.55	-3.51	2.48				
				2110	45.58	-3.41	2.67				
				2120	47.49	-3.23	2.96				
				2130	48.66	-3.13	3.12				
				2140	50.32	-2.98	3.35				
				2150	44.54	-3.51	2.82				
				2160	41.94	-3.77	2.62				
				2170	39.92	-3.99	2.36				
				2180	39.92	-3.99	2.33				
				2190	39.28	-4.06	2.14				
				2200	39.26	-4.06	2.14				

Field intensity pattern

Channel	B5	B8	B12
Gain diagram	Horizontal 023.000000 Hz 023.000000 Hz 	Horizontal 006.000000 Hz 006.000000 Hz 	Horizontal 018.000000 Hz 018.000000 Hz 
Channel	B71	1710MHz-2200MHz	2490MHz-2690MHz
Gain diagram	Horizontal 018.000000 Hz 018.000000 Hz 	Horizontal 1710.000000 Hz 1710.000000 Hz 2200.000000 Hz 	Horizontal 2490.000000 Hz 2490.000000 Hz 