



深圳星源创科技有限公司

Shen Zhen Xing Yuan Chuang Technology Co., Ltd

规格承认书 Approval Sheet

客户名称 Customer	攻氮	日期 Data	2025/02/28
产品名称 Product	WiFi/BT天线	客户机型 Models	AF03
料号 P/N	Main: F972A-14RB-081 Aux: F971A-14LB-083	客户料号 Customer P/N	
规格描述 Specifications	黑色FPC; Main: RF0.81四代端子黑色同轴线, 长度L=81mm, Aux: RF0.81四代端子黑色同轴线, 长度L=83mm		

地址: 深圳市宝安区福永镇福海街道塘尾股份商务大厦1506

Address: 1506, Tangwei Business Building, Fuhai Street, Fuyong Town, Baoan District, Shenzhen

Tel: 0755-82103639 QQ: 487580356 Email: Stephdeng_Vis@126.com



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Specification

1.1 Electrical Properties

Characteristics	Specifications
Working Band	2.4GWiFi/BT; 5GWiFi
Antenna From	PIFA
Impedance	50 Ω
Polarization	Linear
Peak Effi	37%@2.4G; 48%@5G

1.2 Physical Properties

Characteristics	Specifications
Operating Temp	-10°C~+60°C
Storage Temp	-10°C~+70°C
Humidity	10~95%RH

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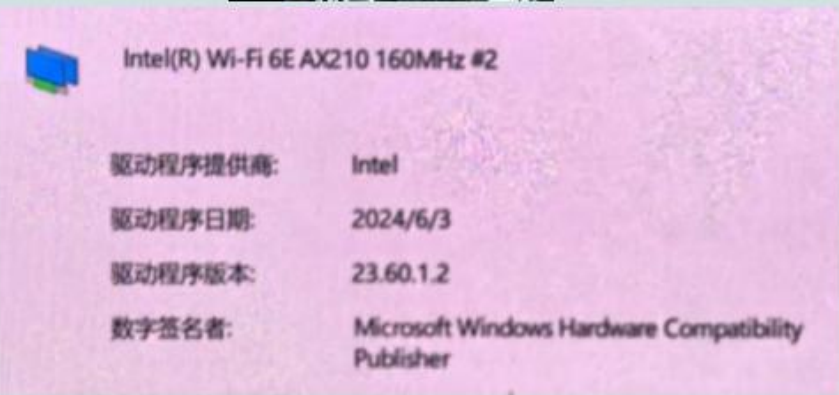
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WiFi Ant Test Information

Frequency	2. 4G (2402~2483) Mhz	5G (5150~5850) Mhz
Module information		
Driver version information		

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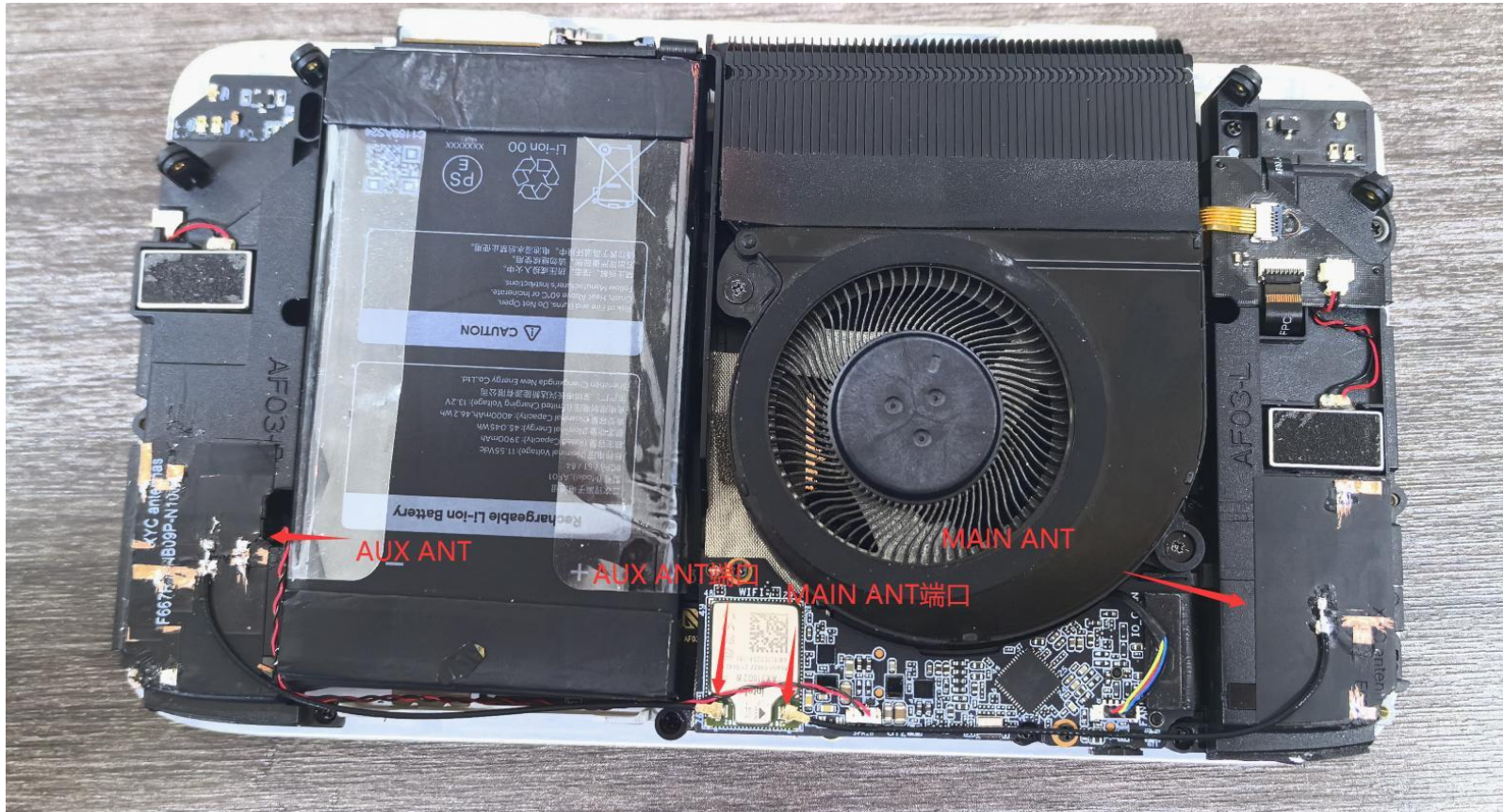
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Antenna Placement



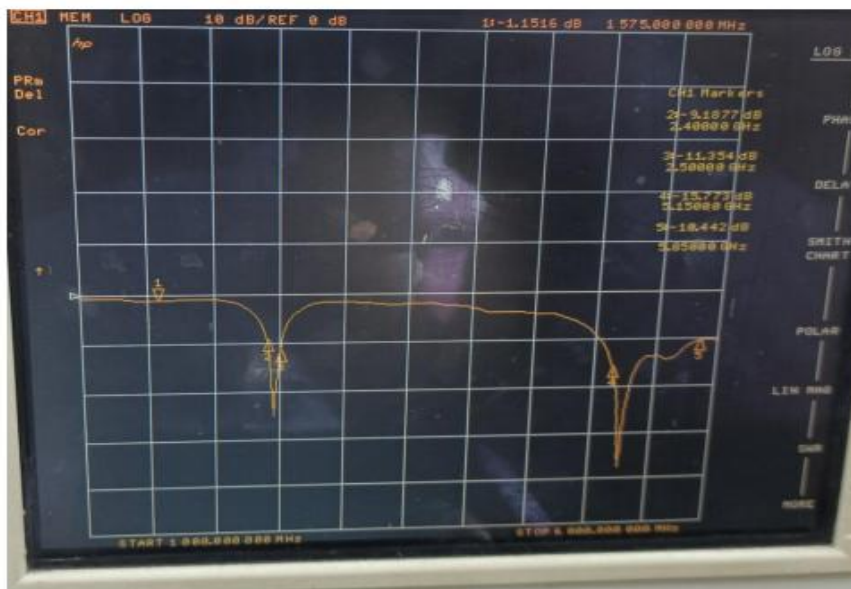
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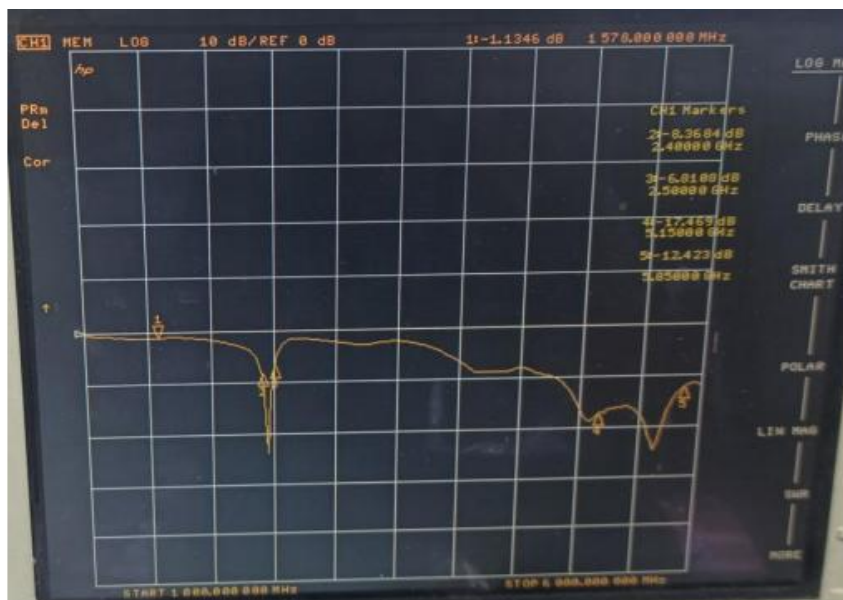
Test Data

S11 Parameter-VSWR(ANT1)



Frequency (MHZ)	2400	2500	5150	5850
Return Loss (DB)	-9.18	-11.35	-15.77	-10.44

S11 Parameter-VSWR(ANT2)



Frequency (MHZ)	2400	2500	5150	5850
Return Loss (DB)	-8.36	-6.81	-17.46	-12.42



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Efficiency Table (ANT1 2.4G) MAIN ANTENNA

Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
2400	31.7	-4.99	-0.19	-2.34	11.832	19.87	-0.19	-16.26
2410	30.02	-5.23	-0.32	-2.47	11.104	18.912	-0.32	-15.5
2420	31.46	-5.02	-0.13	-2.28	11.499	19.961	-0.13	-14.58
2430	31.92	-4.96	-0.13	-2.28	11.505	20.41	-0.13	-13.72
2440	32.22	-4.92	-0.11	-2.26	11.528	20.695	-0.11	-14.42
2450	32.2	-4.92	-0.15	-2.3	11.54	20.663	-0.15	-14.64
2460	32.55	-4.87	-0.14	-2.29	11.754	20.795	-0.14	-14.87
2470	34.91	-4.57	0.11	-2.04	12.785	22.123	0.11	-14.45
2480	36.44	-4.38	0.24	-1.91	13.591	22.851	0.24	-14.68
2490	36.3	-4.4	0.12	-2.03	13.751	22.552	0.12	-15.38
2500	34.64	-4.6	-0.15	-2.3	13.232	21.405	-0.15	-16.61

Efficiency Table (ANT2 2.4G) AUX ANTENNA

Passive Test For WIFI2.4								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHIS (%)	Max (dB)	Min (dB)
2400	34.2	-4.66	-0.73	-2.88	13.35	20.854	-0.73	-20.07
2410	33.52	-4.75	-0.61	-2.76	13.052	20.464	-0.61	-20.85
2420	33.88	-4.7	-0.47	-2.62	13.191	20.694	-0.47	-20.32
2430	34.25	-4.65	-0.34	-2.49	13.436	20.812	-0.34	-19.3
2440	35.03	-4.55	-0.22	-2.37	13.938	21.097	-0.22	-17.93
2450	35.26	-4.53	-0.16	-2.31	14.357	20.902	-0.16	-16.93
2460	36.84	-4.34	0.06	-2.09	15.281	21.563	0.06	-16.16
2470	37.36	-4.28	0.16	-1.99	15.609	21.746	0.16	-15.29
2480	37.65	-4.24	0.32	-1.83	15.942	21.71	0.32	-14.87
2490	37.16	-4.3	0.29	-1.86	15.832	21.325	0.29	-14.5
2500	36.75	-4.35	0.32	-1.83	15.727	21.026	0.32	-13.82

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Efficiency Table (ANT1 5G) MAIN ANTENNA

Passive Test For WIFI5G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
5150	33.78	-4.71	-0.15	-2.3	17.844	15.937	-0.15	-16.1
5170	36.45	-4.38	0.05	-2.1	19.343	17.106	0.05	-14.36
5190	36.47	-4.38	0.13	-2.02	19.214	17.253	0.13	-12.6
5210	41.64	-3.81	0.81	-1.34	21.526	20.112	0.81	-12.59
5230	38.06	-4.2	0.31	-1.84	19.589	18.473	0.31	-14.99
5250	44.52	-3.51	0.94	-1.21	22.97	21.554	0.94	-13.54
5270	43.36	-3.63	1.13	-1.02	22.27	21.09	1.13	-12.4
5290	46.84	-3.29	1.62	-0.53	23.837	22.999	1.62	-12.69
5310	40.79	-3.89	0.75	-1.4	20.654	20.14	0.75	-13.87
5330	43.06	-3.66	1.05	-1.1	22.088	20.969	1.05	-13.77
5350	42.4	-3.73	1.18	-0.97	22.063	20.334	1.18	-14.31
5370	41.79	-3.79	1.38	-0.77	21.834	19.951	1.38	-14.05
5390	34.64	-4.6	0.91	-1.24	18.016	16.627	0.91	-14.35
5410	41.99	-3.77	2.1	-0.05	21.757	20.235	2.1	-13.72
5430	33.7	-4.72	1.33	-0.82	17.554	16.151	1.33	-15
5450	38.48	-4.15	1.99	-0.16	20.099	18.385	1.99	-15.44
5470	33.3	-4.78	1.53	-0.62	17.249	16.052	1.53	-16.64
5490	35.87	-4.45	1.92	-0.23	18.363	17.512	1.92	-16.8
5510	35.56	-4.49	1.87	-0.28	18.207	17.351	1.87	-18.81
5530	37.8	-4.23	1.91	-0.24	19.508	18.29	1.91	-19.4
5550	38.35	-4.16	1.82	-0.33	19.832	18.517	1.82	-20.13
5570	37.17	-4.3	1.42	-0.73	18.947	18.228	1.42	-19.85
5590	41.33	-3.84	1.71	-0.44	20.949	20.384	1.71	-19.84
5610	37.53	-4.26	1.22	-0.93	19.168	18.364	1.22	-21.04
5630	43.32	-3.63	1.58	-0.57	22.119	21.198	1.58	-18.34
5650	34.84	-4.58	0.71	-1.44	17.654	17.187	0.71	-18.16
5670	43.14	-3.65	1.79	-0.36	21.796	21.339	1.79	-16.58
5690	34.66	-4.6	0.75	-1.4	17.695	16.96	0.75	-17.86
5710	42.03	-3.76	1.33	-0.82	21.736	20.296	1.33	-17.46
5730	38.65	-4.13	0.77	-1.38	20.045	18.606	0.77	-21.62
5750	39.2	-4.07	0.81	-1.34	20.347	18.858	0.81	-22.99
5770	39.52	-4.03	1.05	-1.1	20.782	18.742	1.05	-22.78
5790	38.57	-4.14	1.12	-1.03	20.648	17.924	1.12	-20.29
5810	39.1	-4.08	1.43	-0.72	21.148	17.951	1.43	-15.04
5830	39.95	-3.98	1.75	-0.4	21.887	18.067	1.75	-14.74
5850	40.83	-3.89	1.9	-0.25	22.622	18.208	1.9	-16.98

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Efficiency Table (ANT2 5G) AUX ANTENNA

Passive Test For WIFI5G								
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)
5150	28.75	-5.41	-0.32	-2.47	18.675	10.072	-0.32	-24.64
5170	27.88	-5.55	-0.29	-2.44	18.119	9.764	-0.29	-22.45
5190	30.86	-5.11	0.09	-2.06	20.15	10.714	0.09	-21.66
5210	31.91	-4.96	-0.03	-2.18	21.077	10.835	-0.03	-20.38
5230	35.32	-4.52	0.57	-1.58	23.474	11.848	0.57	-20.96
5250	35.21	-4.53	0.26	-1.89	23.374	11.836	0.26	-21.98
5270	40.06	-3.97	0.82	-1.33	26.689	13.37	0.82	-20.35
5290	38.69	-4.12	0.74	-1.41	25.969	12.716	0.74	-20.07
5310	40.04	-3.97	0.93	-1.22	27.002	13.04	0.93	-18.09
5330	41.13	-3.86	0.8	-1.35	27.677	13.449	0.8	-18.72
5350	44.13	-3.55	1.02	-1.13	29.707	14.42	1.02	-17.91
5370	41.93	-3.78	0.95	-1.2	28.342	13.584	0.95	-18.41
5390	40.15	-3.96	1.02	-1.13	27.157	12.995	1.02	-17.02
5410	46.73	-3.3	1.54	-0.61	31.332	15.398	1.54	-16.22
5430	44.12	-3.55	1.45	-0.7	29.441	14.68	1.45	-16.08
5450	45.62	-3.41	1.6	-0.55	30.581	15.037	1.6	-15.28
5470	43.98	-3.57	1.23	-0.92	29.396	14.582	1.23	-16.07
5490	43.18	-3.65	1.01	-1.14	28.726	14.458	1.01	-14.13
5510	45.4	-3.43	1.12	-1.03	30.053	15.349	1.12	-13.33
5530	44.79	-3.49	0.88	-1.27	29.886	14.908	0.88	-13.93
5550	48.41	-3.15	1.48	-0.67	32.791	15.616	1.48	-14.03
5570	43.95	-3.57	1.18	-0.97	29.636	14.316	1.18	-14.37
5590	47.04	-3.28	1.35	-0.8	31.38	15.661	1.35	-14.47
5610	42.65	-3.7	0.99	-1.16	28.471	14.183	0.99	-15.49
5630	46.35	-3.34	1.32	-0.83	31.24	15.105	1.32	-14.84
5650	42.14	-3.75	1.07	-1.08	28.348	13.79	1.07	-16.24
5670	43.41	-3.62	0.95	-1.2	28.956	14.459	0.95	-17.01
5690	42.04	-3.76	1.07	-1.08	27.879	14.158	1.07	-18.18
5710	40.11	-3.97	0.91	-1.24	26.661	13.445	0.91	-17.92
5730	45.27	-3.44	1.42	-0.73	30.26	15.011	1.42	-16.53
5750	39.05	-4.08	0.59	-1.56	25.708	13.346	0.59	-16.41
5770	43.76	-3.59	0.87	-1.28	28.395	15.366	0.87	-16.57
5790	39.24	-4.06	0.63	-1.52	25.348	13.889	0.63	-16.44
5810	43.1	-3.66	1.22	-0.93	27.864	15.236	1.22	-15.79
5830	42.43	-3.72	1	-1.15	27.107	15.324	1	-14.98
5850	46.86	-3.29	1.26	-0.89	29.205	17.652	1.26	-14.83

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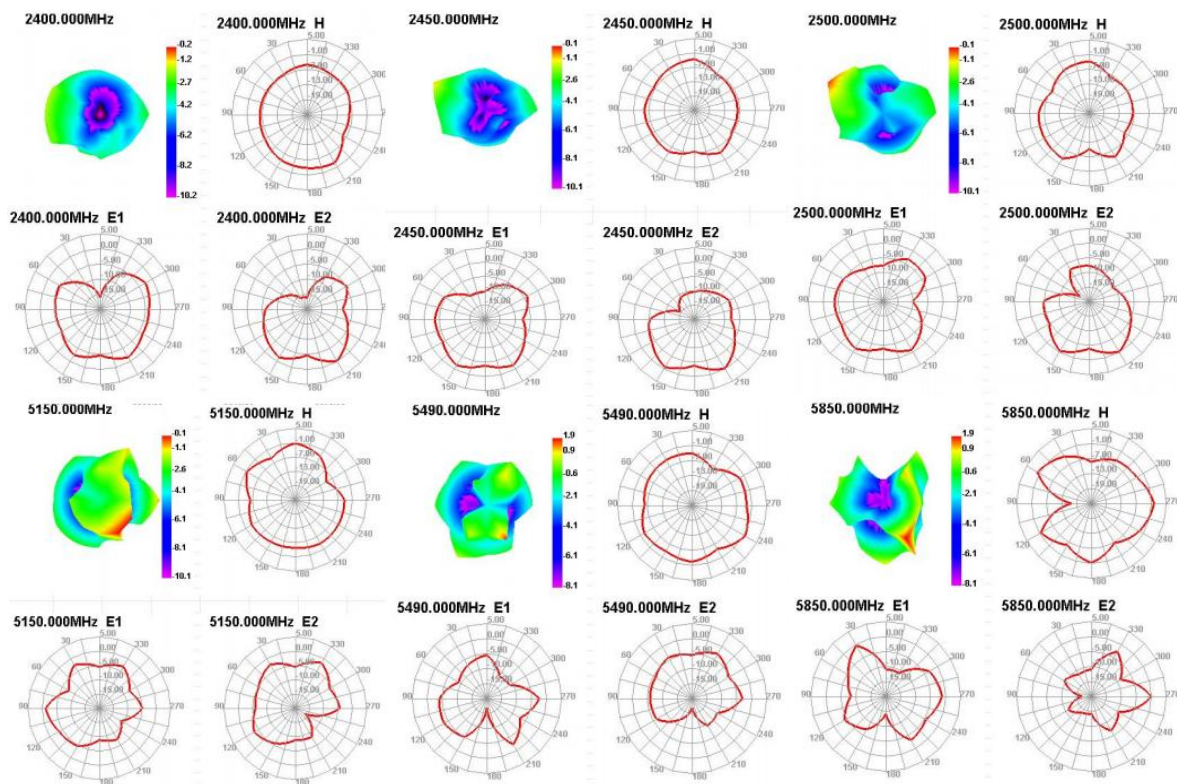
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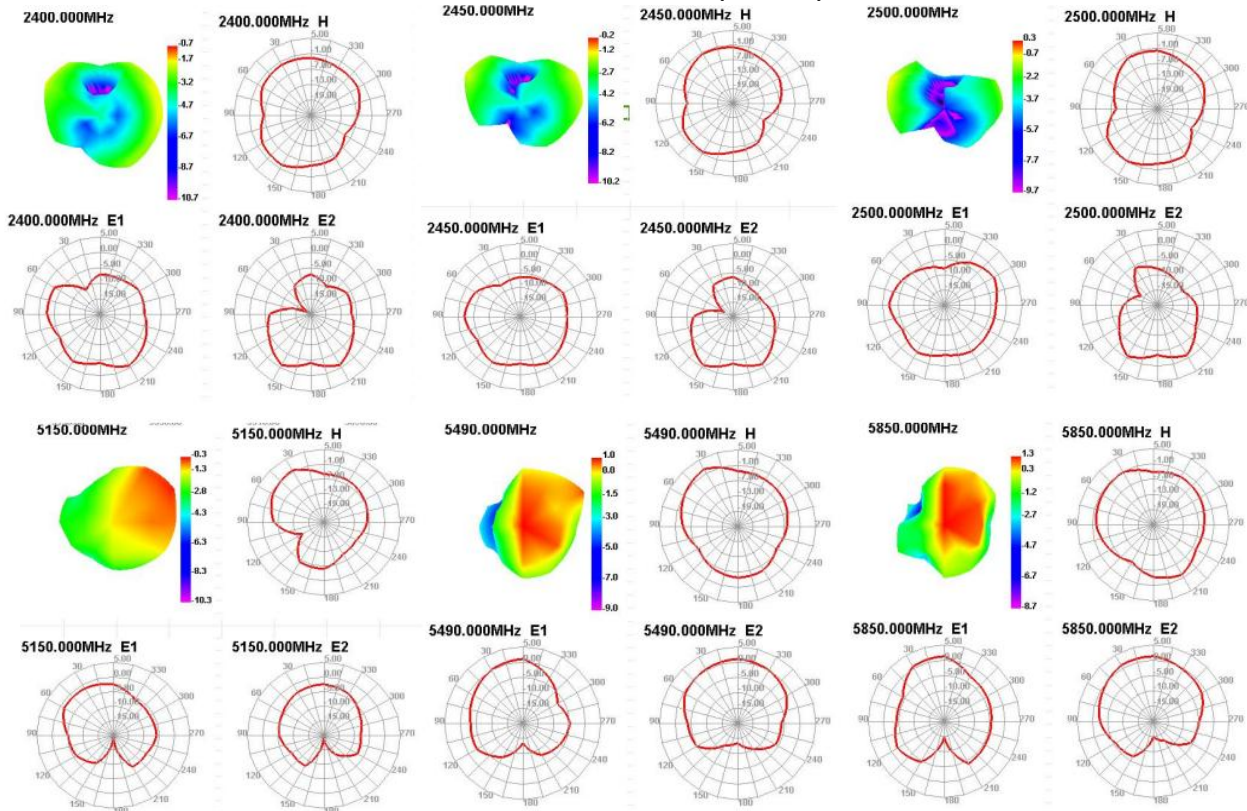
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Radiation Pattern(ANT1)



Radiation Pattern(ANT2)



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WiFi Active Test Data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	10.03	CH1 11Mbps	-71.1
	2437	CH6 11Mbps	10.91	CH6 11Mbps	-73
	2467	CH11 11Mbps	10.43	CH11 11Mbps	-73.55
802.11a		TRP		TIS	
	5180	CH36 6Mbps	12.26	CH36 54Mbps	-70.12
	5300	CH60 6Mbps	12.16	CH60 54Mbps	-70.53
	5805	CH161 6Mbps	12.57	CH161 54Mbps	-70.96

BT Test

测试环境：开放空间(通道)

测试工具：蓝牙音响

测试距离：10/m

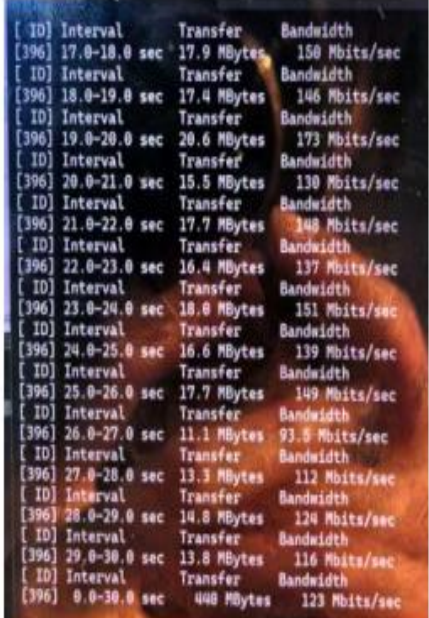
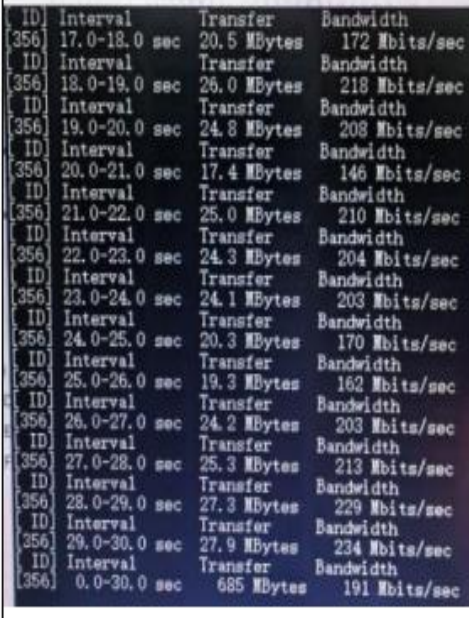
结果：播放音乐流畅，无杂音。



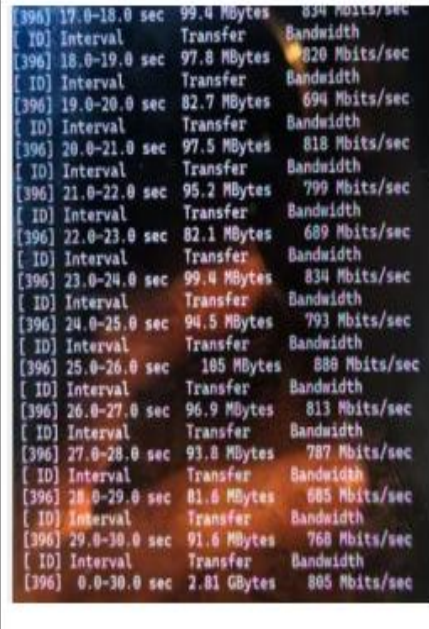
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Throughput test (2.4G)

上行	123M	下行	191M
图片		图片	

Throughput test (5G)

上行	926M	下行	753M
图片		图片	

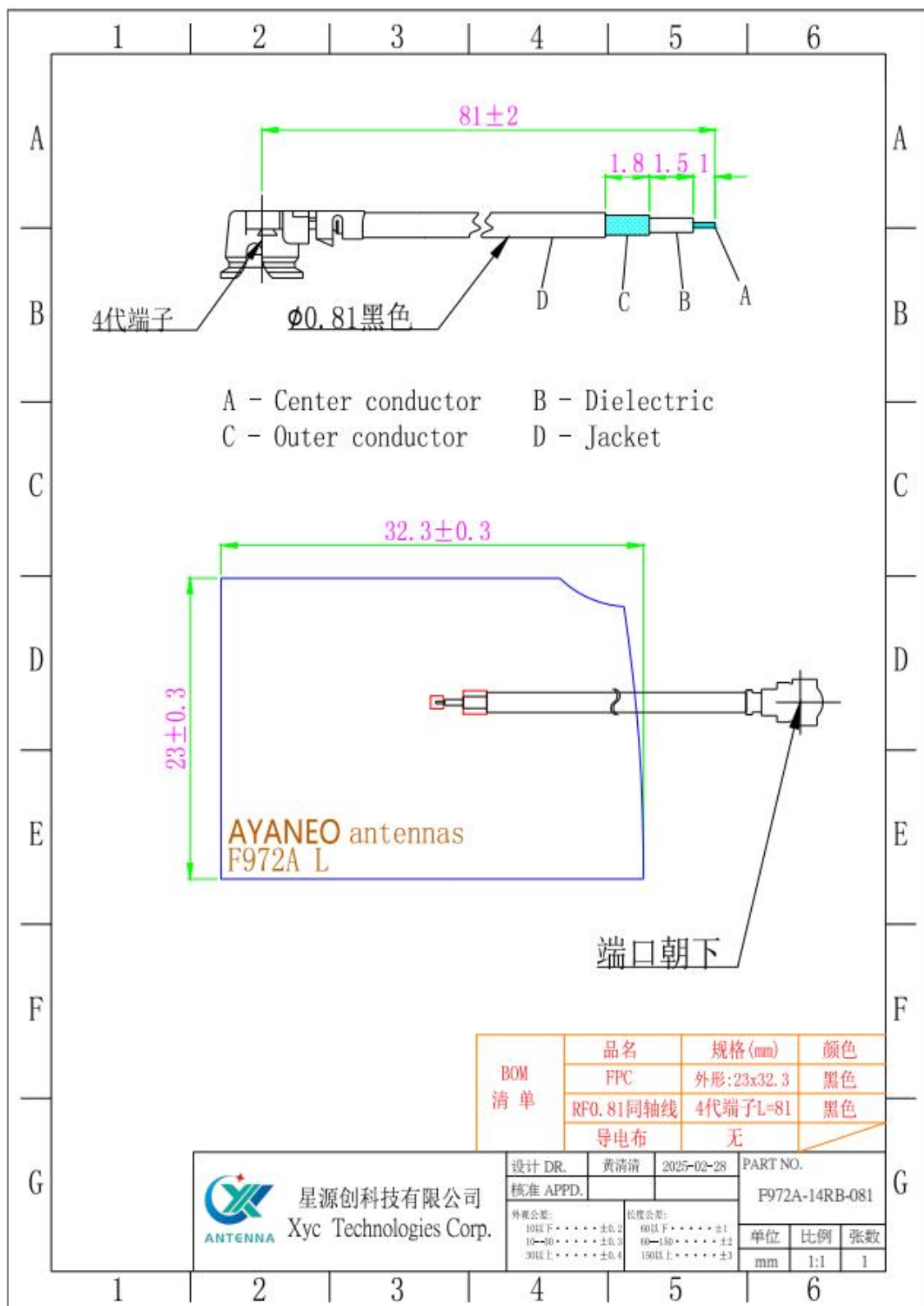
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Antenna Assembly



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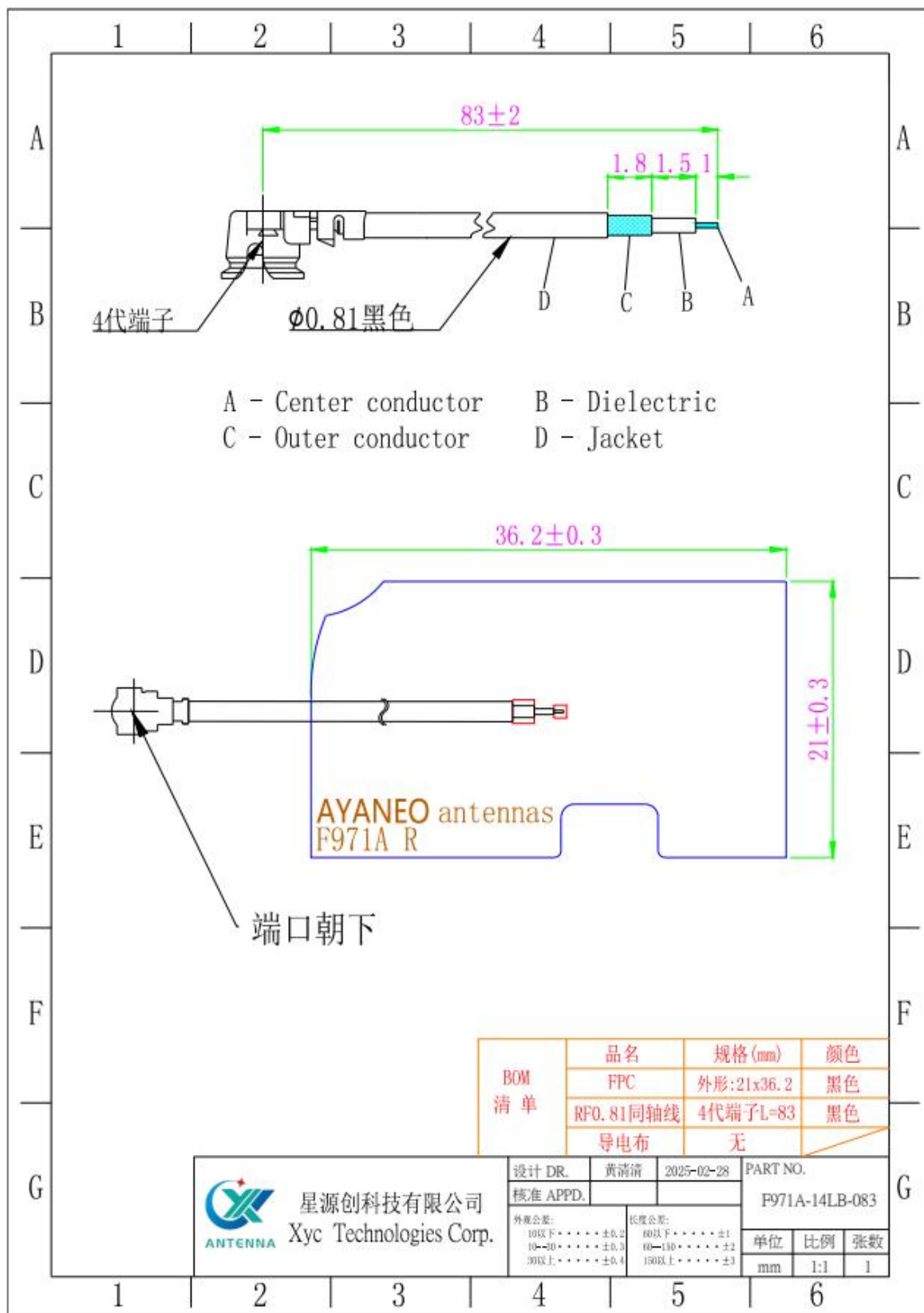
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