



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	2023/12/22
产品名称 Product	WiFi/BT天线	客户机型 Models	AM02
料号 P/N	Main:F888D-14LB-245 Aux:F888E-14RG-085	客户料号 Customer P/N	
规格描述 Specifications	黑色FPC，背面需加补强； Main: RF0.81四代端子黑色同轴线，长度L=245mm； Aux: RF0.81四代端子灰色同轴线； 长度L=85mm		

供应商承认签印 Vender Approved By	客户承认签印 Customer Approved By
	
Checked By:	Checked By:
Audit By:	Audit By:
Approval By:	Approval By:

文件修订履历表

版本 Version	修订内容 Revise The Content	修订人 Revused	核准 Approval	修订日期 Date	备注 Note

地址：深圳市宝安区福永镇福海街道塘尾股份商务大厦1506

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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	50%@2.4G; 49%@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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WiFi Ant Test Information

Frequency	2.4G(2402~2483) Mhz	5G(5150~5850) Mhz
Module information		

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Antenna Placement



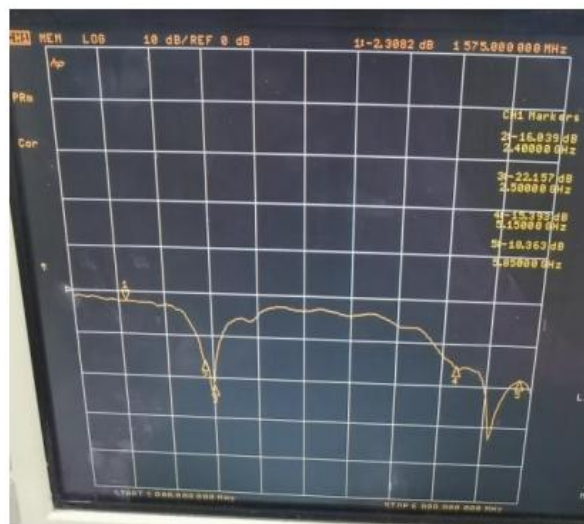
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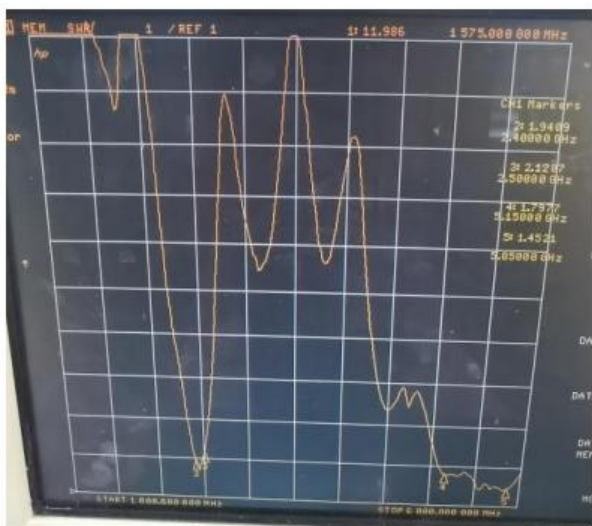
Test Data

S11 Parameter-VSWR(Main)



Frequency (MHZ)	2400	2500	5150	5850
VSWR	1.37	1.16	1.40	1.27
Return Loss (DB)	-16.03	-22.15	-15.39	-18.36

S11 Parameter-VSWR(Aux)



Frequency (MHZ)	2400	2500	5150	5850
VSWR	1.94	2.12	1.79	1.45
Return Loss (DB)	-9.89	-8.85	-10.89	-14.68

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Efficiency Table (Main 2.4G) ANT2

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	40.41	-3.94	0.12	-2.03	17.904	22.502	0.12	-15.17	4.06	30	45.78	46.01
2410	37.03	-4.31	-0.39	-2.54	16.857	20.17	-0.39	-16.24	3.93	30	46.01	46.29
2420	40.31	-3.95	-0.2	-2.35	18.543	21.767	-0.2	-16.1	3.75	30	45.73	46.01
2430	43.78	-3.59	0.05	-2.1	20.091	23.686	0.05	-15.8	3.63	30	46.01	46.36
2440	46.67	-3.31	0.21	-1.94	21.468	25.206	0.21	-15.08	3.51	30	46.12	46.48
2450	43.73	-3.59	-0.1	-2.25	20.38	23.345	-0.1	-15.28	3.49	30	46.12	46.54
2460	42.64	-3.7	-0.39	-2.54	20.175	22.461	-0.39	-15.3	3.31	30	46.14	46.52
2470	48.97	-3.1	0.11	-2.04	23.375	25.593	0.11	-14.78	3.22	30	46.4	46.8
2480	50.78	-2.94	0.36	-1.79	24.658	26.126	0.36	-14.36	3.31	60	46.26	46.64
2490	49.64	-3.04	0.4	-1.75	24.575	25.066	0.4	-14.46	3.44	60	46.51	46.91
2500	47.95	-3.19	0.42	-1.73	24.259	23.687	0.42	-13.87	3.61	60	46.47	46.86

Efficiency Table (Aux 2.4G) ANT1

Passive Test For WIFI2.4												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
2400	38.41	-4.16	0.7	-1.45	19.039	19.374	0.7	-13.48	4.86	30	45.78	46.01
2410	37.71	-4.24	0.56	-1.59	19.038	18.67	0.56	-13.07	4.8	30	46.01	46.29
2420	39.25	-4.06	0.81	-1.34	19.994	19.251	0.81	-12.09	4.87	30	45.73	46.01
2430	38.83	-4.11	0.84	-1.31	20.04	18.793	0.84	-11.57	4.95	30	46.01	46.36
2440	38.83	-4.11	0.97	-1.18	20.368	18.462	0.97	-11.5	5.07	30	46.12	46.48
2450	39.32	-4.05	1.11	-1.04	20.99	18.332	1.11	-12.24	5.16	30	46.12	46.54
2460	38.73	-4.12	1.07	-1.08	21.031	17.7	1.07	-13.42	5.19	30	46.14	46.52
2470	36.61	-4.36	0.65	-1.5	20.233	16.381	0.65	-13.8	5.01	30	46.4	46.8
2480	37.13	-4.3	0.5	-1.65	20.822	16.31	0.5	-13.26	4.8	30	46.26	46.64
2490	38.11	-4.19	0.38	-1.77	21.025	17.085	0.38	-12.81	4.57	30	46.51	46.91
2500	35.93	-4.44	0.29	-1.86	19.417	16.517	0.29	-13.62	4.73	30	46.47	46.86

WiFi Active Test Data

802.11b	Frequency	TRP		TIS	
	2412	CH1 11Mbps	11.25	CH1 11Mbps	-73.83
	2437	CH6 11Mbps	11.33	CH6 11Mbps	-73.56
	2467	CH11 11Mbps	11.28	CH11 11Mbps	-73.64
802.11a		TRP		TIS	
	5180	CH36 6Mbps	10.56	CH36 54Mbps	-67.36
	5300	CH60 6Mbps	10.4	CH60 54Mbps	-66.54
	5805	CH161 6Mbps	10.31	CH161 54Mbps	-67.29

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Efficiency Table (Main 5G) ANT2

Passive Test For WIFI5G						
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)
5150	26.4	-7.12	-0.53	-2.68	10.409	15.989
5170	24.59	-7.31	-0.9	-3.05	9.594	15.001
5190	27.87	-6.41	-0.26	-2.41	11.948	15.925
5210	26.72	-6.44	-0.63	-2.78	11.823	14.894
5230	29.32	-5.8	-0.51	-2.66	14.673	14.652
5250	28.45	-5.78	-0.96	-3.11	14.762	13.684
5270	27.98	-5.69	-1.12	-3.27	15.821	12.154
5290	31.99	-4.95	-0.4	-2.55	18.429	13.561
5310	28.51	-5.45	-0.63	-2.78	17.253	11.254
5330	31.53	-5.01	0.04	-2.11	19.638	11.888
5350	30.25	-5.19	-0.13	-2.28	18.828	11.418
5370	31.82	-4.97	-0.15	-2.3	19.529	12.287
5390	27.45	-5.61	-0.91	-3.06	16.945	10.507
5410	34.01	-4.68	-0.08	-2.23	21.239	12.769
5430	30.17	-5.2	-0.26	-2.41	18.954	11.216
5450	30.71	-5.13	0.2	-1.95	19.613	11.099
5470	29.5	-5.3	0.12	-2.03	19.402	10.098
5490	29.63	-5.28	0.09	-2.06	20.088	9.537
5510	30.38	-5.17	0.08	-2.07	20.842	9.543
5530	32.86	-4.83	0.2	-1.95	22.43	10.428
5550	34.95	-4.57	0.34	-1.81	23.96	10.991
5570	34.05	-4.68	-0.04	-2.19	23.659	10.388
5590	37.97	-4.21	0.18	-1.97	26.375	11.594
5610	36.19	-4.41	-0.18	-2.33	24.914	11.276
5630	39.27	-4.06	0	-2.15	27.243	12.022
5650	32.76	-4.85	-0.76	-2.91	23.134	9.624
5670	38.27	-4.17	-0.13	-2.28	27.393	10.881
5690	30	-5.23	-1.34	-3.49	21.637	8.364
5710	38.52	-4.14	-0.39	-2.54	27.901	10.62
5730	31.61	-5	-1.11	-3.26	23.172	8.434
5750	34.08	-4.68	-0.79	-2.94	25.393	8.682
5770	30.73	-5.12	-1	-3.15	23.224	7.506
5790	32.56	-4.87	-0.58	-2.73	24.674	7.889
5810	31.31	-5.04	-0.61	-2.76	23.788	7.525
5830	35.28	-4.52	-0.18	-2.33	26.981	8.301
5850	33.33	-4.77	-0.33	-2.48	25.592	7.742

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Efficiency Table (Aux 5G) ANT1

Passive Test For WIFI5G												
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHS (%)	DHS (%)	Max (dB)	Min (dB)	Directivity (dBi)	Beamwidth (3dB)	AttH (dB)	AttV (dB)
5150	27.52	-5.6	-1.63	-3.78	17.183	10.336	-1.63	-24.5	3.97	0	49.82	49.4
5170	31.38	-5.03	-1.13	-3.28	19.413	11.966	-1.13	-21.15	3.91	0	50.13	49.77
5190	28.94	-5.38	-1.38	-3.53	17.83	11.111	-1.38	-19.31	4	0	50.42	49.95
5210	35.21	-4.53	-0.43	-2.58	21.737	13.471	-0.43	-19.08	4.1	0	50.88	50.49
5230	31.54	-5.01	-0.79	-2.94	19.338	12.203	-0.79	-20.03	4.22	90	50.42	50.08
5250	37.72	-4.23	0.08	-2.07	22.618	15.102	0.08	-19.84	4.32	30	51.02	50.72
5270	36.38	-4.39	-0.25	-2.4	21.505	14.875	-0.25	-17.17	4.14	30	50.85	50.6
5290	40.85	-3.89	0.2	-1.95	23.999	16.853	0.2	-15.24	4.08	30	51.34	51.12
5310	38.06	-4.19	0.01	-2.14	22.125	15.939	0.01	-15.7	4.21	90	50.44	50.36
5330	40.58	-3.92	0.44	-1.71	23.323	17.256	0.44	-16.43	4.36	90	51.08	51.01
5350	42.09	-3.76	0.45	-1.7	24.296	17.794	0.45	-15.89	4.21	30	51.02	51.01
5370	40.96	-3.88	0.09	-2.06	24.054	16.91	0.09	-14.76	3.97	30	50.91	50.95
5390	37.37	-4.27	-0.23	-2.38	22.288	15.08	-0.23	-15.83	4.05	30	50.46	50.43
5410	43.99	-3.57	0.4	-1.75	26.436	17.556	0.4	-17.64	3.96	30	51.18	51.09
5430	40.08	-3.97	-0.08	-2.23	24.246	15.83	-0.08	-19.46	3.89	30	50.69	50.7
5450	43.34	-3.63	0.45	-1.7	26.593	16.746	0.45	-18.52	4.08	150	50.71	50.85
5470	41.29	-3.84	0.3	-1.85	25.73	15.565	0.3	-18.39	4.14	120	50.93	50.83
5490	41.54	-3.81	0.2	-1.95	25.976	15.567	0.2	-20.91	4.02	120	50.92	50.79
5510	44.57	-3.51	0.3	-1.85	27.888	16.685	0.3	-24.89	3.8	150	51.18	51.16
5530	45.02	-3.47	0.38	-1.77	28.342	16.674	0.38	-20.5	3.85	120	51.44	51.3
5550	49.1	-3.09	0.98	-1.17	31.099	17.998	0.98	-17.92	4.07	120	51.89	51.76
5570	43.55	-3.61	0.31	-1.84	27.644	15.906	0.31	-20.5	3.92	150	51.42	51.33
5590	47.84	-3.2	0.53	-1.62	30.265	17.575	0.53	-21.13	3.73	150	51.71	51.76
5610	42.99	-3.67	0.18	-1.97	27.067	15.927	0.18	-19.39	3.85	150	51.17	51.22
5630	48.99	-3.1	0.93	-1.22	30.698	18.296	0.93	-16.91	4.03	120	51.78	51.77
5650	41.53	-3.82	0.29	-1.86	25.851	15.68	0.29	-17.91	4.1	90	51.47	51.55
5670	46.16	-3.36	0.79	-1.36	28.292	17.87	0.79	-15.66	4.15	90	52.12	52.28
5690	39.91	-3.99	0.05	-2.1	24.331	15.575	0.05	-14.48	4.04	90	52.12	52.25
5710	41.65	-3.8	0.31	-1.84	25.395	16.251	0.31	-14.14	4.11	90	51.95	52.05
5730	42.87	-3.68	0.48	-1.67	26.111	16.757	0.48	-16.57	4.15	90	51.59	51.69
5750	38.7	-4.12	0.07	-2.08	23.401	15.303	0.07	-16.18	4.2	90	51.12	51.15
5770	39.9	-3.99	0.32	-1.83	24.174	15.721	0.32	-16.91	4.31	90	51.02	51.06
5790	36.69	-4.35	-0.03	-2.18	22.302	14.386	-0.03	-19.38	4.33	90	51.08	51.16
5810	38.79	-4.11	0.25	-1.9	23.528	15.264	0.25	-18.33	4.36	90	51.36	51.43
5830	38.77	-4.11	0.46	-1.69	23.252	15.521	0.46	-15.33	4.57	90	51.65	51.66
5850	40.25	-3.95	0.8	-1.35	24.051	16.201	0.8	-15.13	4.75	90	51.88	52.05

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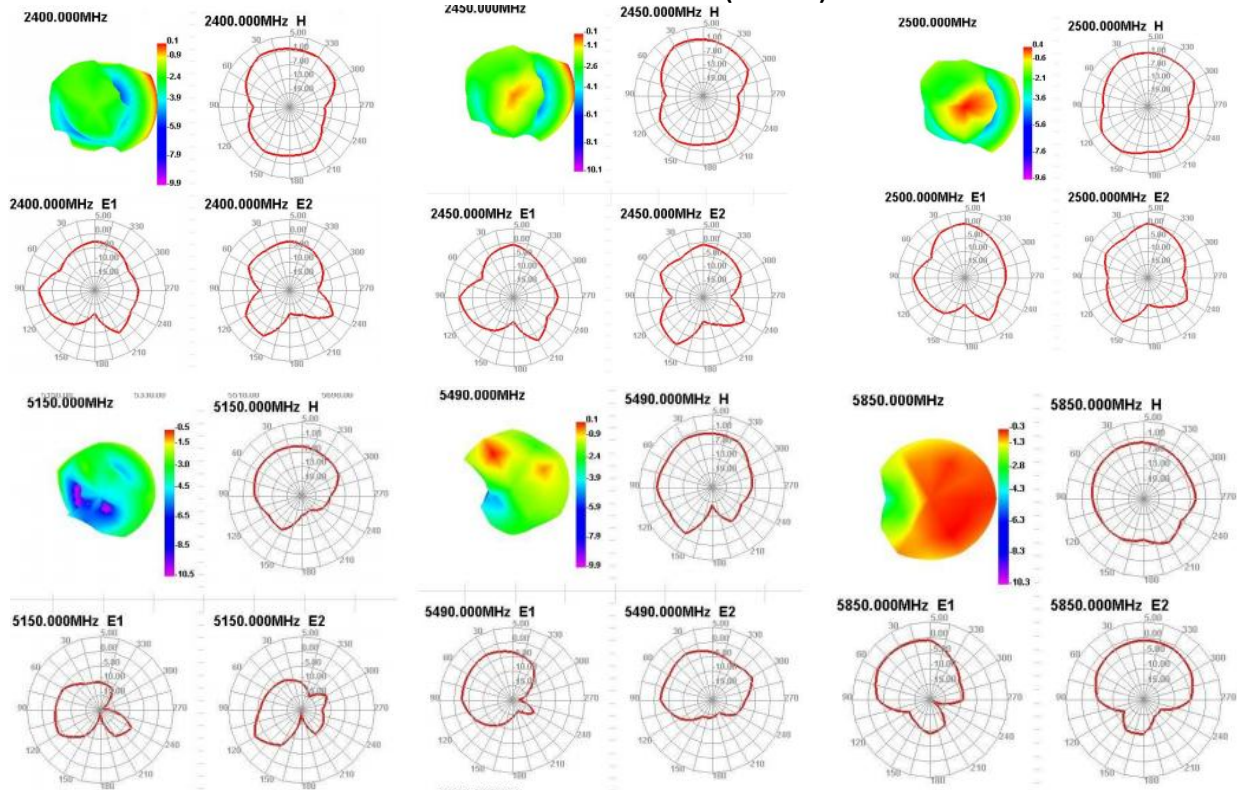
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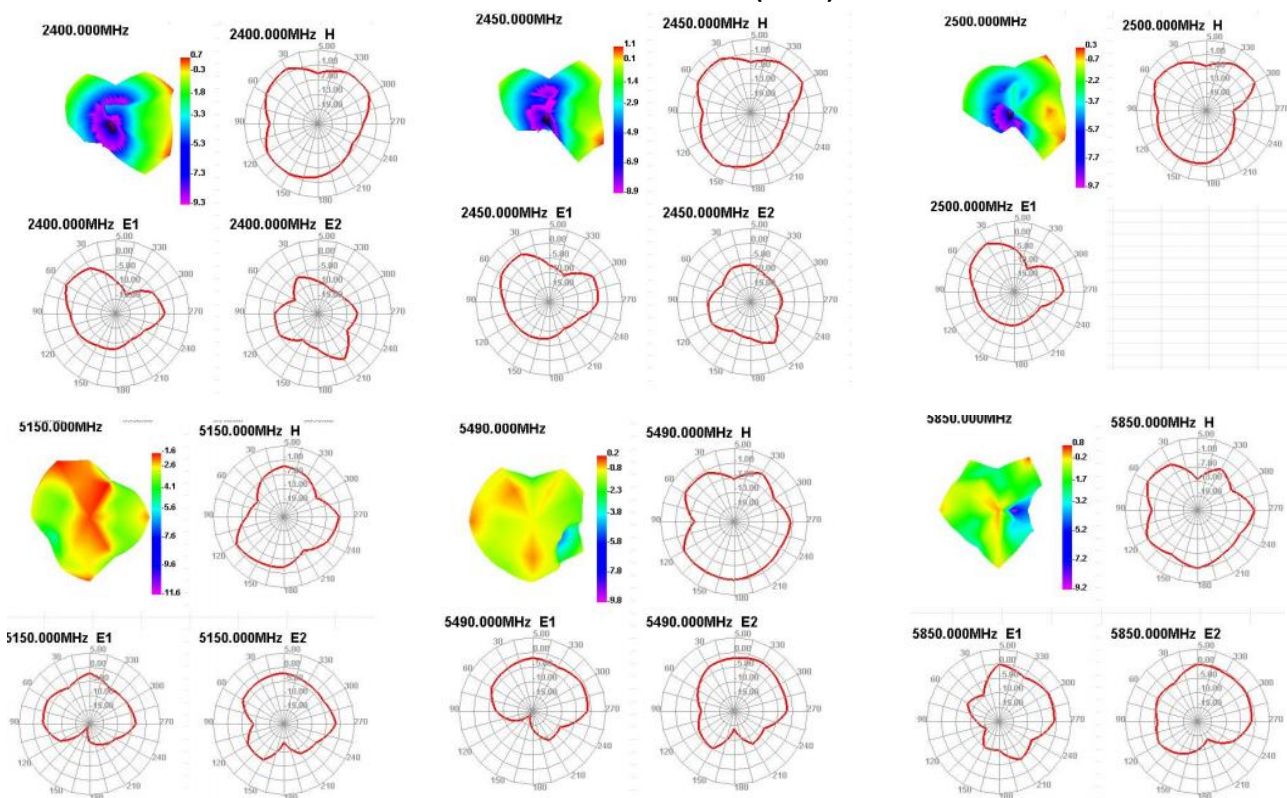
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Radiation Pattern(Main)



Radiation Pattern(Aux)



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Throughput Test (2.4G)

上行		下行	
图片		图片	

Throughput Test (5G)

上行		下行	
图片		图片	

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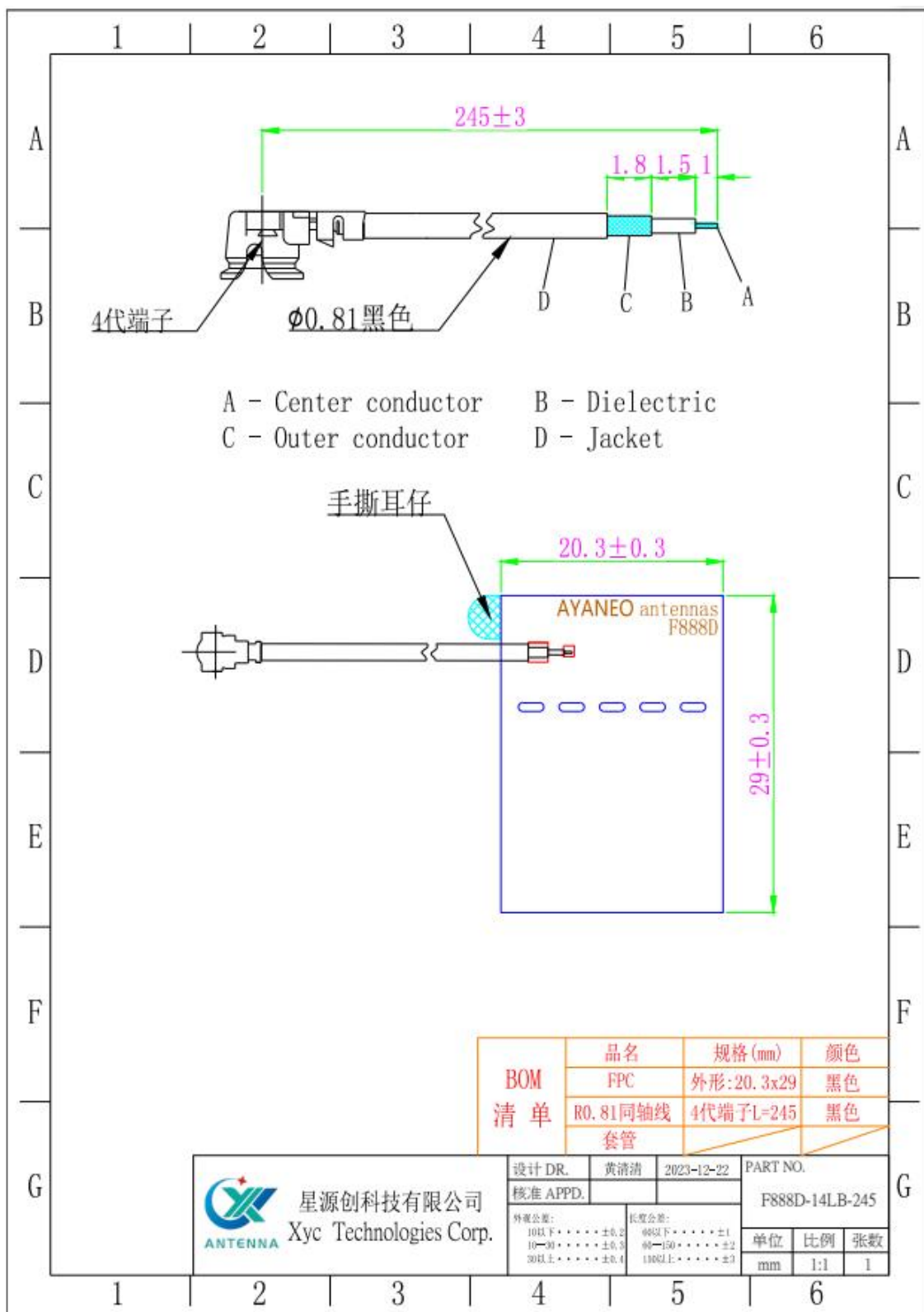
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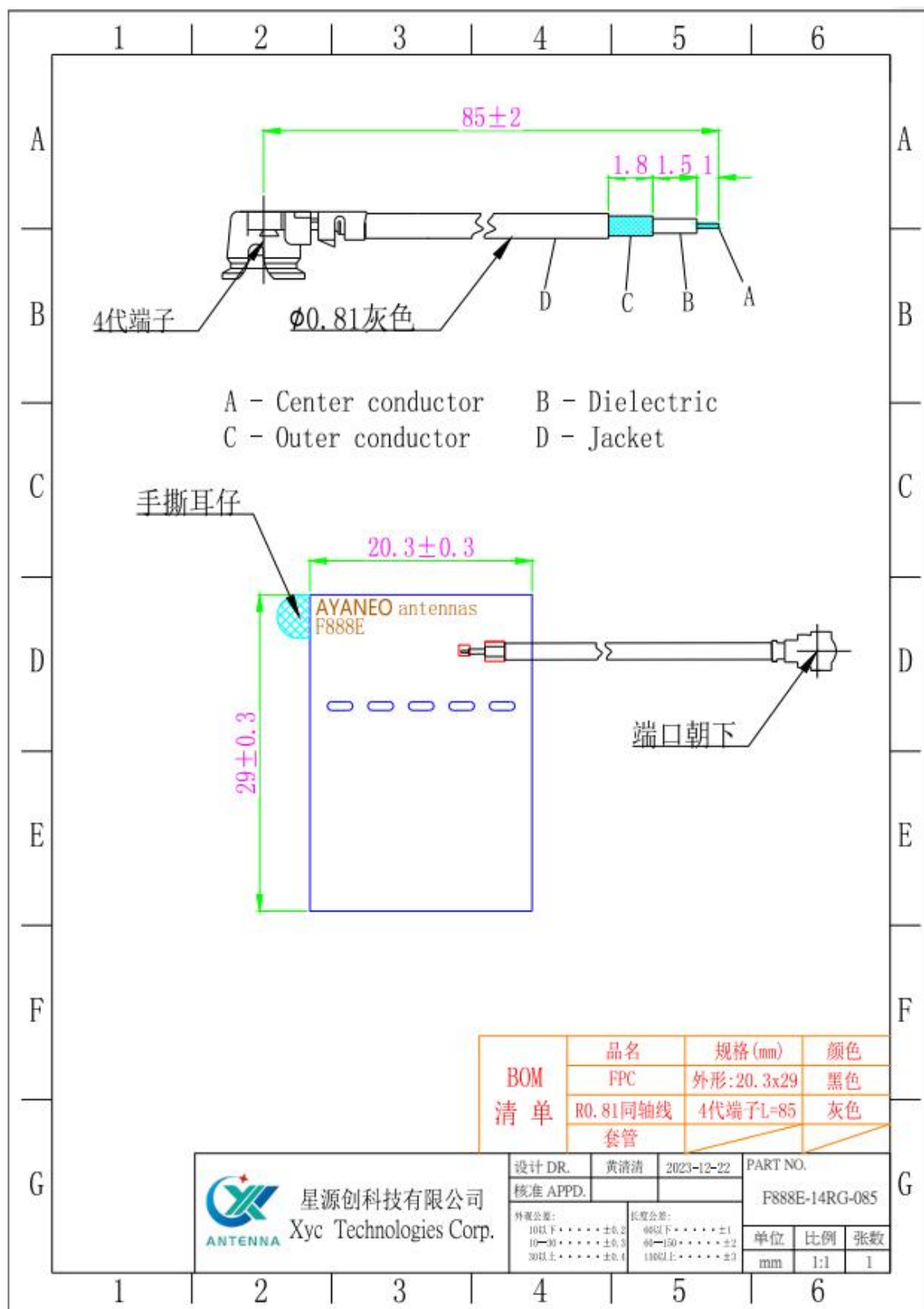
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