



福州中天迅通信技术有限公司

Fuzhou ZHONGTIANXUN Communication Technology Co., Ltd

项目名称(Project Name): DX4000 (LOB) -MAIN

天线型号(Antenna model): ZTX-DX4000-LOB-MAIN

A

物料编码(Item number): F.00000561

MPN 码 (MPN) : B0680320D

日期 (Date) : 2022-12-1

设计公司: 福州中天迅通信技术有限公司

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A1	2022-8-23	规格书制定。 First issue.
A2	2022-12-1	FPC 外形，线路更新；丝印第一行去掉 “-ANT” 离型纸及背胶更新，同轴线中剥位置更新。 Performance optimization; FPC appearance, circuit update; Remove the first line of silk screen. “-ANT” release paper and adhesive are updated, and the stripping position of coaxial line is updated.





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1 名词解释 (Explanation of Nouns)

dBi	Decibel relative isotropic antenna
Tx	Transmit frequency
Rx	Receive frequency
TRP	Total Radiated Power
TIS	Total Isotropic Sensitivity
VSWR	Voltage Standing Wave Ratio
GSM	Global Service for Mobile communication
DCS	Digital Communication System
CDMA	Code Division Multiple Access
WCDMA	Wideband Code Division Multiple Access

2 测试设备 (Test equipment)

矢量网络分析仪 (Vector network analyzer)

安捷伦 8753E (Agilent 8753E)

频谱分析仪 (Frequency analyzer)

综合测试仪 (General-purpose tester)

安捷伦 8960 E5515C

标准高性能无反射屏蔽暗室 (High performance no-reflection shielding darkroom)

ETS

8m*4m*4m

3 适用频段 (Applied frequency band)

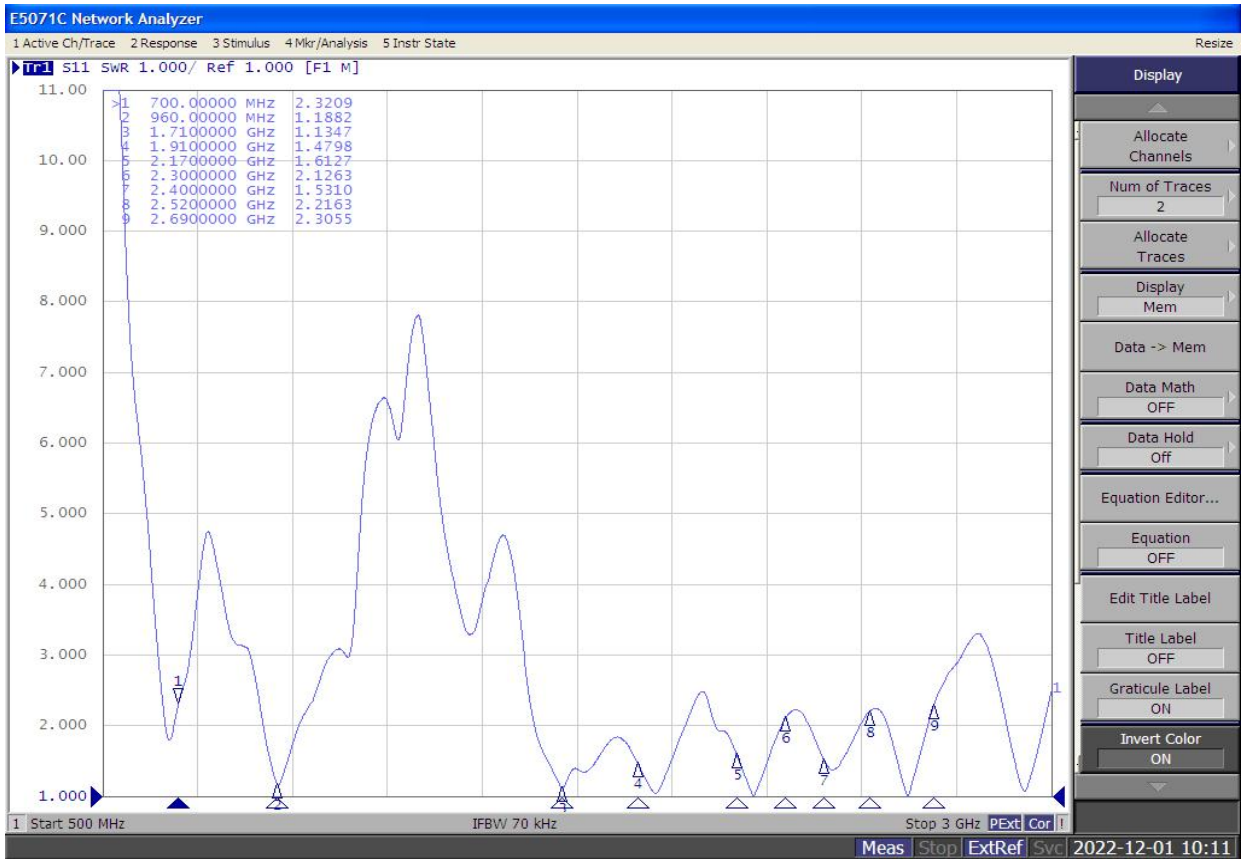
频段 Frequency Band	频率 Frequency
MAIN	700-2710MHz。





4. 测试指标和数据图表 (Test project)

4.1 驻波图 (VSWR)





4.2 无源效率 (Antenna passive test)

chNo	Freq	Gain	Efficiency_Pcent
1	700	-2.288073016	22.68634139
2	720	-2.429535285	21.48145846
3	740	-3.178583407	17.35829817
4	760	-3.717804711	16.66499078
5	780	-2.810505174	20.35600295
6	800	-2.66035576	21.32944781
7	820	-1.848223016	23.1245182
8	840	-2.098447417	23.02361483
9	860	-1.805128294	22.06705796
10	880	-2.07699895	22.30777951
11	900	-0.165400954	32.21016889
12	920	-0.309489771	28.66863739
13	940	-0.352836232	31.18360345
14	960	-0.022026081	33.54662408
15	1710	0.536556634	43.36904889
16	1740	1.656001956	44.06609021





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17	1770	1. 686061366	42. 88806347
18	1800	1. 139063962	40. 83897197
19	1830	1. 21390608	45. 45429158
20	1860	1. 063229962	44. 96851434
21	1890	1. 270616726	49. 23153072
22	1920	1. 48123778	47. 90927019
23	1950	1. 598413239	50. 05794741
24	1980	1. 644575553	50. 3170152
25	2010	1. 442725259	44. 88029816
26	2040	1. 164253037	42. 73028435
27	2070	1. 130784984	39. 35763868
28	2100	1. 483451607	37. 57864197
29	2130	2. 594679197	43. 45196288
30	2160	2. 241632015	44. 27436459
31	2170	2. 461684065	45. 71139531
32	2300	-0. 0011857	34. 72693271



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33	2320	0.465403708	34.87890988
34	2340	0.952485843	33.58335242
35	2360	1.564699767	37.35403277
36	2380	2.382956269	42.16177624
37	2400	2.805969623	48.28068102
38	2500	3.462992926	44.26781216
39	2520	3.746827035	43.02845565
40	2540	3.79178005	40.05734482
41	2560	3.478905893	39.98739643
42	2580	3.23500062	39.23391092
43	2600	3.138298742	40.27707146
44	2620	3.07202793	40.58527427
45	2640	2.744507977	40.70459476
46	2660	2.7428351	40.23412705
47	2680	2.572809272	39.19016361
48	2690	2.665730381	39.78938477



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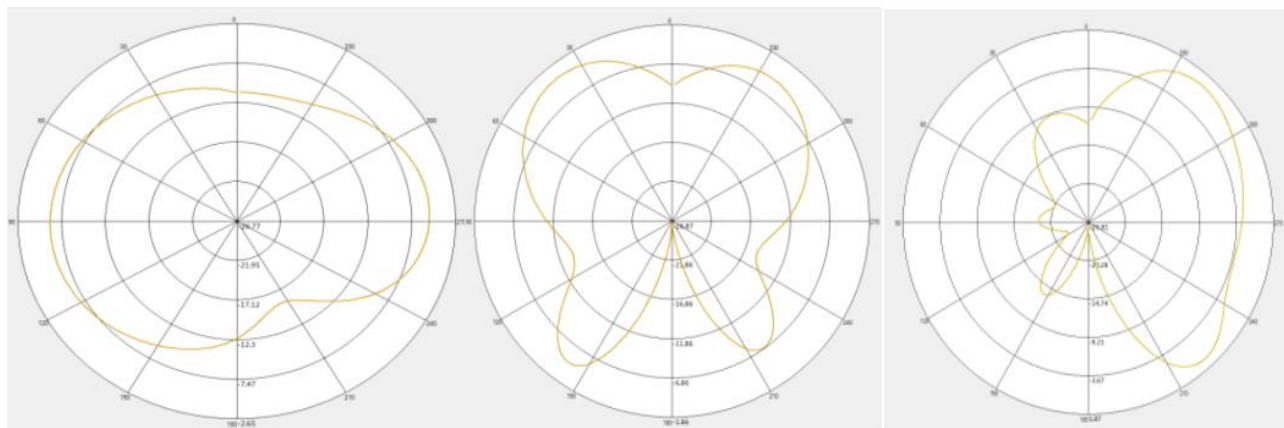
4.3 2D 方向图 (2D direction diagram)

800MHz

XOY面

XOZ面

YOZ面

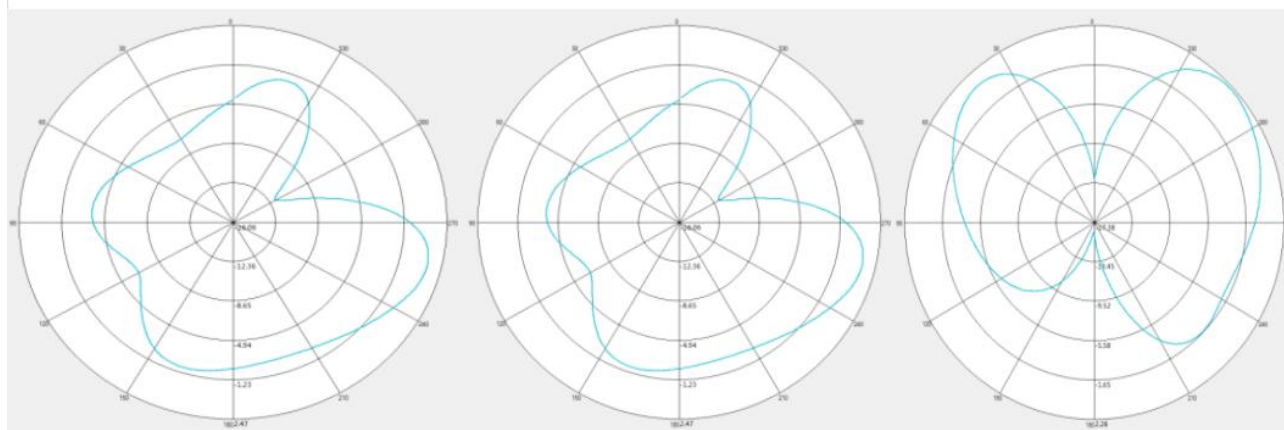


1860MHz

XOY面

XOZ面

YOZ面



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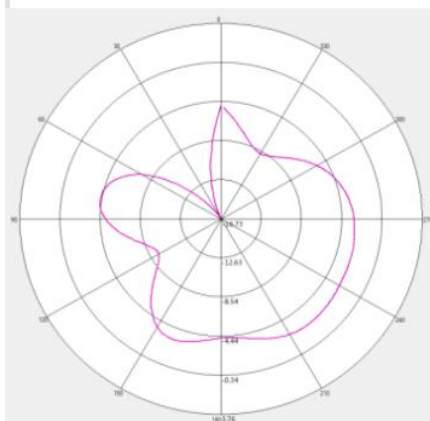


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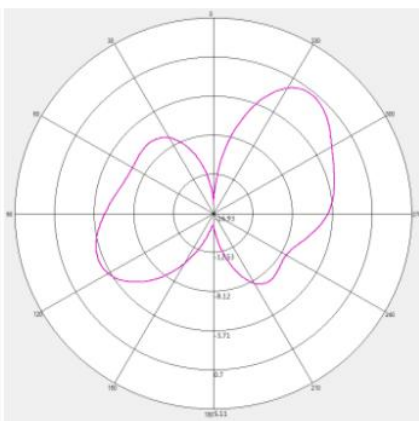
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2500MHz

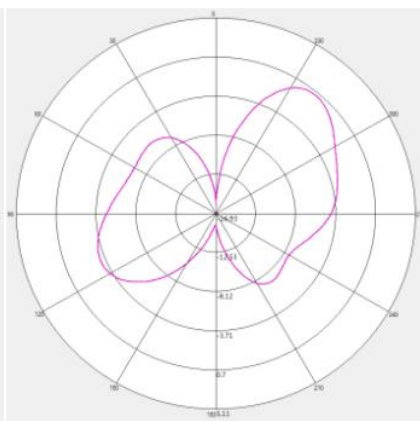
XOY面



XOZ面



YOZ面

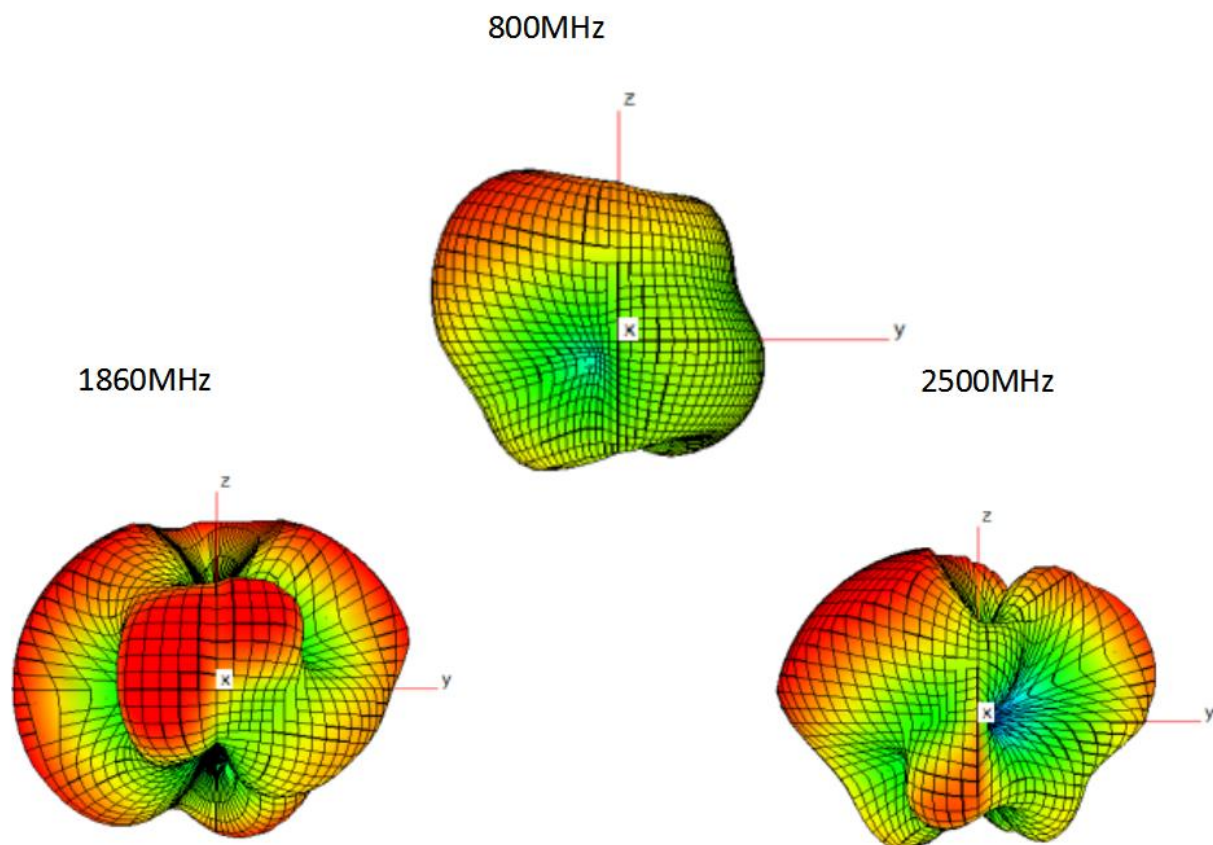


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4.4 3D 方向图 (3D direction diagram)





4.5 有源数据 (Active test data)

频段	参数\信道	10562	10700	10838
W1	TRP	18.37	18.97	18.42
	TIS	-103.77	-103.91	-104.34
频段	参数\信道	9662	9800	9938
W2	TRP	17.59	17.70	17.89
	TIS	-103.07	-102.97	-103.94

频段	参数\信道	4357	4408	4458
W5	TRP	17.16	17.20	18.02
	TIS	-105.43	-104.98	-105.68
频段	参数\信道	2937	3013	3088
W8	TRP	19.93	20.55	19.54
	TIS	-105.28	-106.13	-106.64
频段	参数\信道	50	300	550
band1	TRP	19.11	19.40	18.67
	TIS	-89.34	-90.34	-90.80
频段	参数\信道	1250	1575	1900
band3	TRP	18.97	18.56	18.44
	TIS	-90.27	-89.98	-89.26
频段	参数\信道	2450	2525	2600
band5	TRP	18.11	17.79	18.44
	TIS	-94.51	-94.63	-94.30
频段	参数\信道	2850	3100	3350
band7	TRP	17.25	17.17	17.82
	TIS	-91.34	-91.82	-91.57





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频段	参数\信道	3500	3625	3750
band8	TRP	20.00	21.18	18.26
	TIS	-91.25	-90.89	-91.00
频段	参数\信道	2420	2430	2440
band20	TRP	17.93	18.60	18.96
	TIS	-90.40	-90.98	-90.11
频段	参数\信道	9260	9360	9460
band28	TRP	19.68	19.39	17.36
	TIS	-90.89	-92.16	-93.16
频段	参数\信道	37850	38000	38150
band38	TRP	18.89	18.72	17.29
	TIS	-88.15	-88.00	-87.86
频段	参数\信道	38750	39150	39550
band40	TRP	18.71	18.94	19.19
	TIS	-90.60	-89.23	-88.8
频段	参数\信道	40340	40640	41140
band41	TRP	19.19	18.72	17.47
	TIS	-88.71	-87.69	-86.9



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4.6 装配图 (Environment treatment)

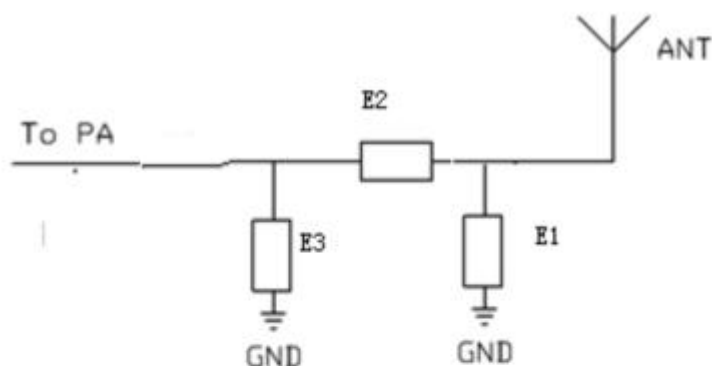


注意： 打印机排线没有接导电泡棉。





5. 匹配说明 (Matching circuit)

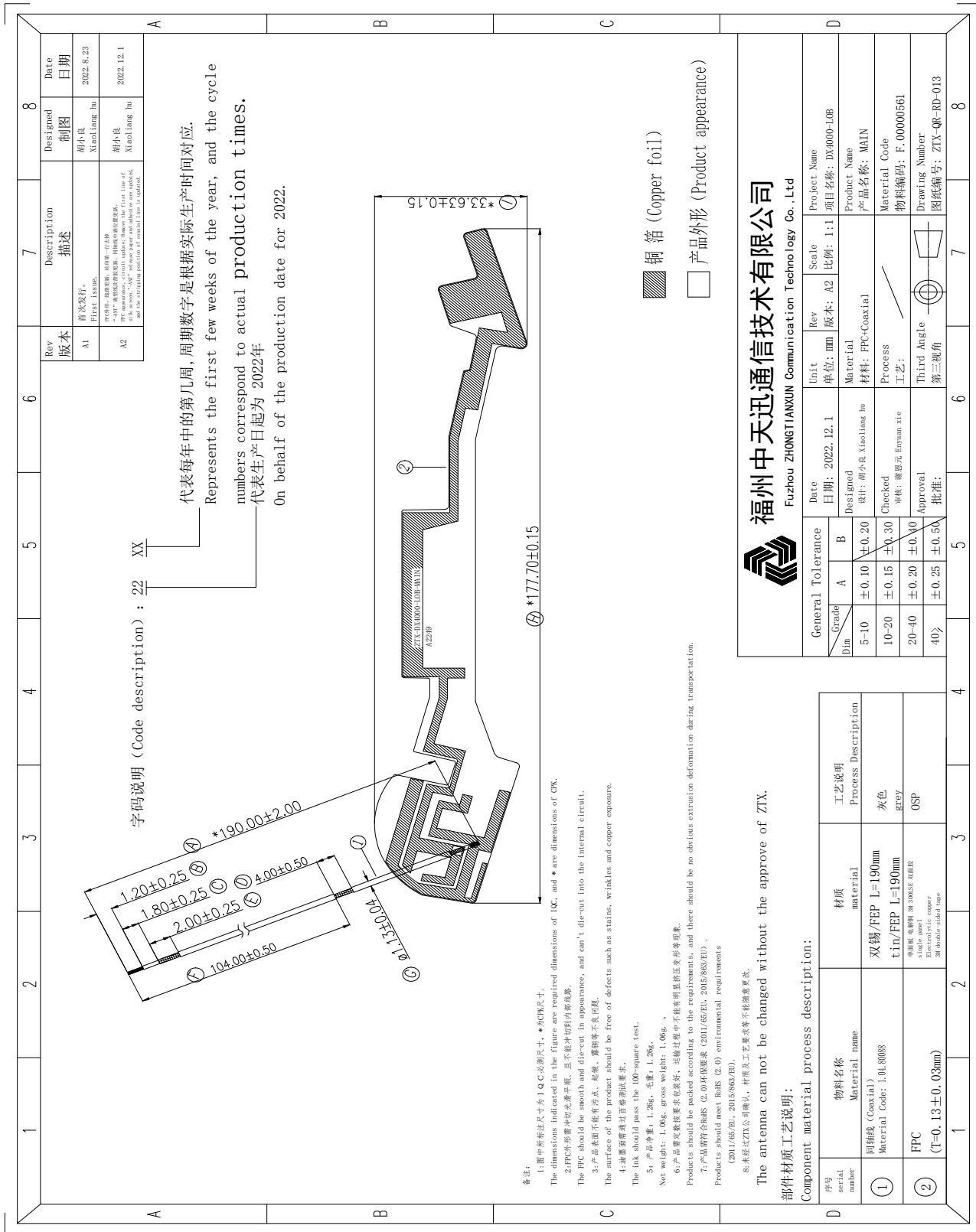


Matching description	LTE
E1	NC
E2	0 Ω
E3	NC





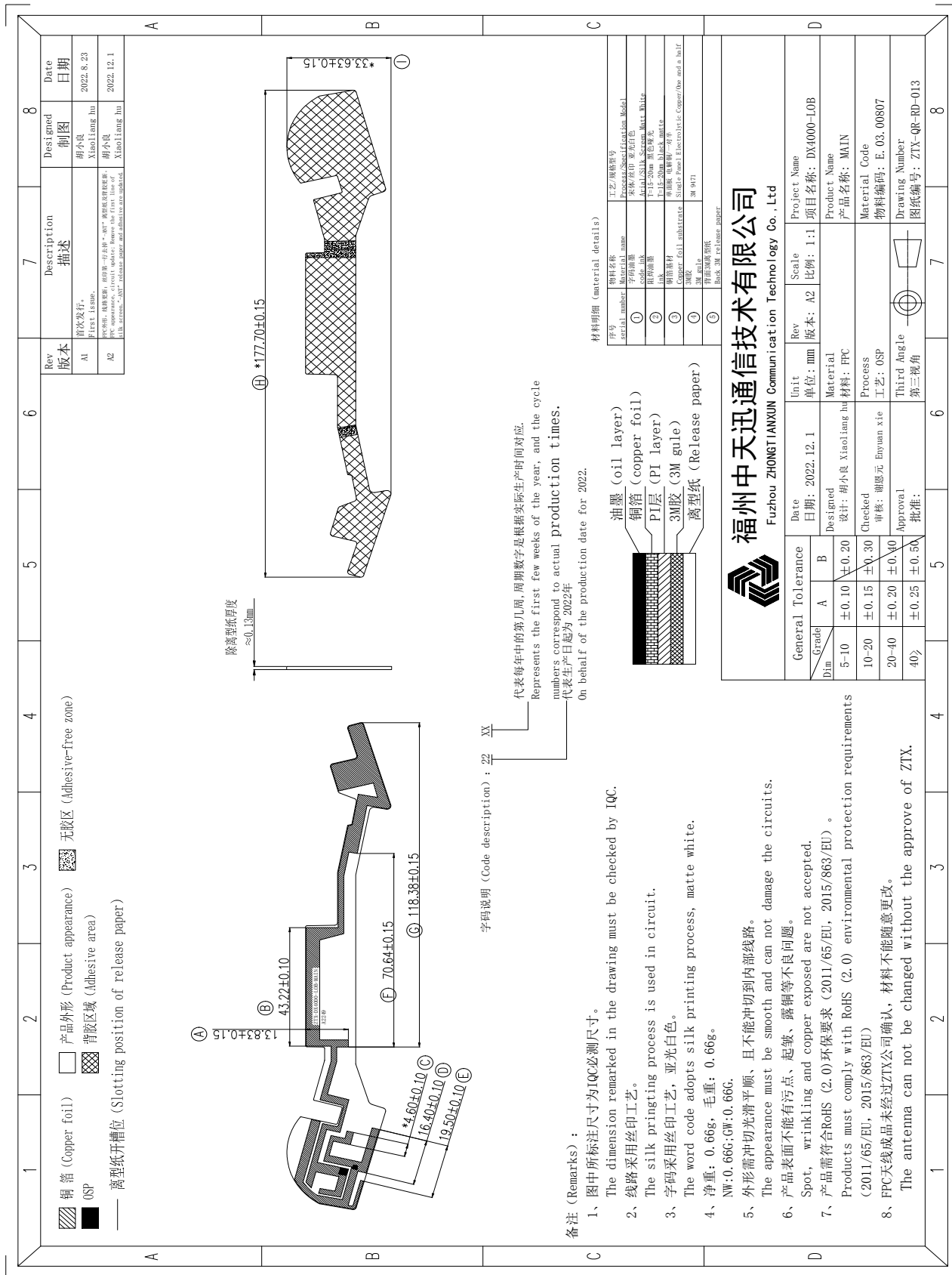
6. 天线外形图 (Mechanical Specification)





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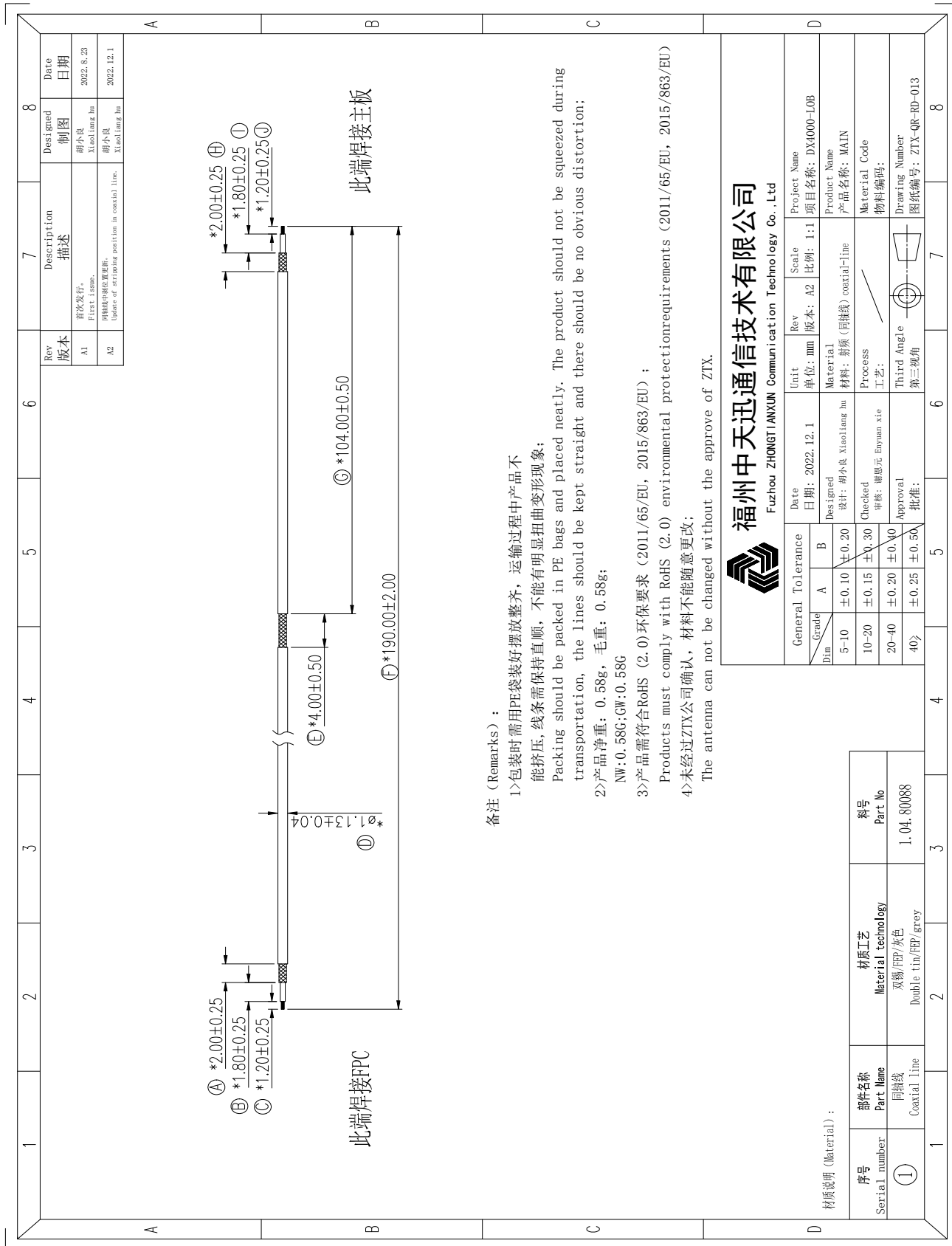
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SOP

product name	Product number	Process number/name	version	File Number	Instrument calibration and requirements:				
MAIN	DX4000-LOB	package	A1	ZTY-QD-WI-023	1. The test equipment must be grounded. 2. After reconnecting the interface or when the connection test is unstable, the instrument needs to be calibrated.				
Operation method & operation parameters (after self-checking the operation of the procedure is qualified, it can flow into the next procedure) Figure 2: Sealed PE bag packaging/labeling Figure 3: Sealed PE bag packaging/labeling Figure 4: Packing Figure 5: Attach the outer box label/attach shipping inspection report Figure 6: Sealing					1. Confirm the quantity of 50pcs products for rubber band wrapping. 2. Put 50pcs product into (240*160mm) PE open bag, paste small label, fill in product name, material number, quantity, period and other information; 4. Packing, carton size (45*32.5*21cm), except for the mantissa of each box (500pcs), and a handwritten inspection report is attached. 5. The label is affixed to the upper right corner of the outer box, and the contents of the outer label (including: company name, supplier code, customer specification number, production cycle, production batch packaging quantity, supplier code, enclosed inspection report, ROHS, etc.); 6. Seal the labeled box with adhesive tape in the shape of "I" ;				
					6S requirements: 1. Keep the test site clean and tidy, free of dust, water, and oil. 2. The materials are placed neatly and clearly marked.				
					Note: 1. Whether the customer material code and quantity are correct, the label must be printed by the machine. 2. The contents of the inner label, outer label, shipping report, and delivery note must be consistent. 3. If it is a test product or there is a change, the corresponding mark shall be affixed, the mantissa mark shall be affixed to the mantissa box, and the inspection report shall be enclosed.				
					Material name	Material code	Specification	Dosage	Remarks
					PE open pocket	1.12.000030	240*160*0.05mm	100/bag	
					PE sealed bag	1.12.000023	330*230*0.05mm	10/bag	
cardboard	1.13.000003	42*30cm	25#/box						
Carton	1.12.000056	45*32.5*21cm	1/box						
label									
Rubber band									
version			modify the content						
Formulate	Xiaoliang hu	Review	Ailing yi	Approve					
			Revision date	Revised by					



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Figure 4: Packing



Figure 5: Attach the outer box label/attach shipping inspection report

Figure 3: Sealed PE bag packaging/labeling



Figure 6: Sealing

Picture 2: Sealed PE bag packaging/labeling

