

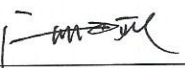


样品承认书

Confirmation of products

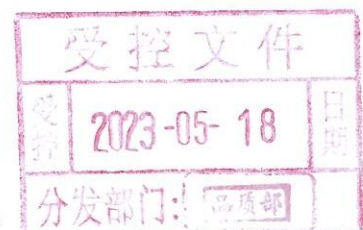
客户名称 Customer	深圳市智博通电子有限公司				
项目名称 Project Name	Z2101AX	版本 Version	A.1	日期 Date	2023-5-10
项目料号 Project NO.	24.03.01.016	客户料号 Customer NO.	124.0000.531		
频段 Frequency Range	600~960MHz 1700~2700MHz 3300~5000MHz 5100~5800MHz	备注 Notes	DIV+WIFI		
设计 Designed By					
审核 Approved By					
客户确认 Clients' Approval					

设计单位：深圳市林荣科技有限公司

Designer: SHENZHEN 3GTX ANTENNA TECHNOLOGY CO.,LTD.

地址：深圳市龙华区大浪街道华荣路联建工业园 A1 栋

Building 1, 3 floors, Huarong Road, Dalang Street, Longhua District, Shenzhen



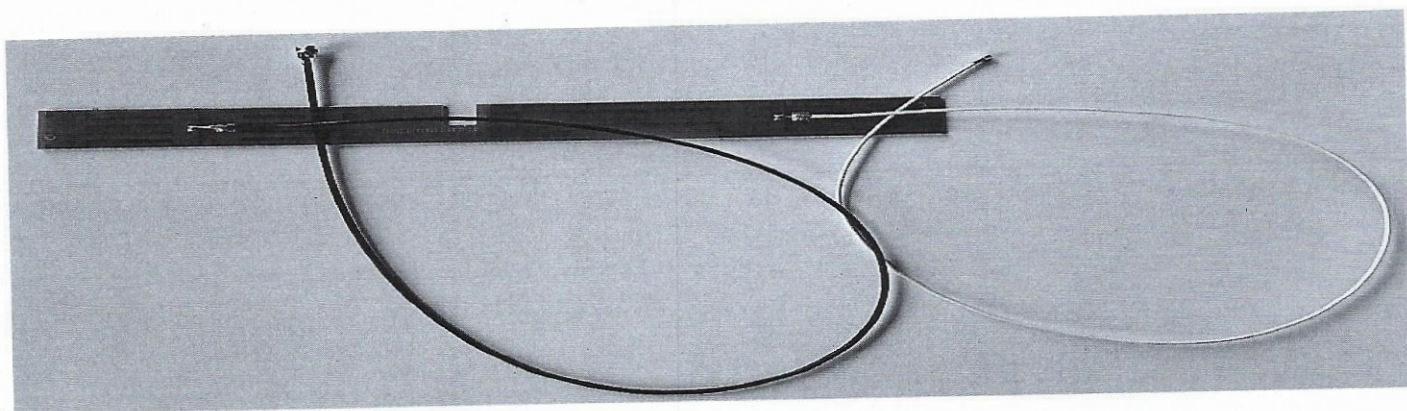
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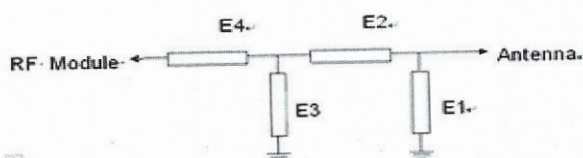


1、 Specification

This report mainly provides the testing conditions of various electric and structural performance parameters for cell phone antenna ----Z2101AX Picture 1 shows the antenna designed by LR.



2 、 Matching circuit diagram



Element	Value
E1(O201)	
E2(O201)	0欧姆
E3(O201)	
E4(O201)	0欧姆

3、 VSWR Testing

3.1 Testing connection

The Return Loss testing devices are connected in sequence: Agilent5071C Network Analyzer → Testing Cable → Customer-providing Devices.

3.2 VSWR

The following table expresses the VSWR value of antenna's two edges of its frequency range. With regard to the relevant diagram of VSWR

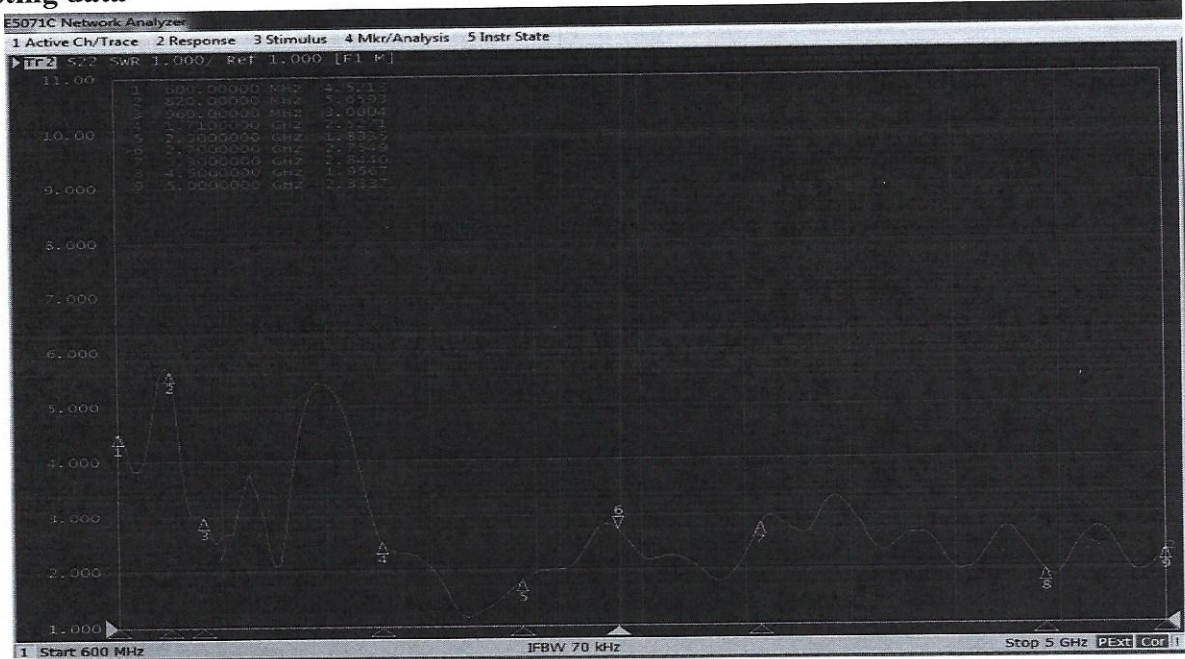
Z2101AX DIV 天线 VSWR								
Frequency (MHz)	600	960	2170	2300	2700	3300	4500	5000
VSWR	4.52	3.00	2.52	1.83	2.75	2.84	1.95	2.33

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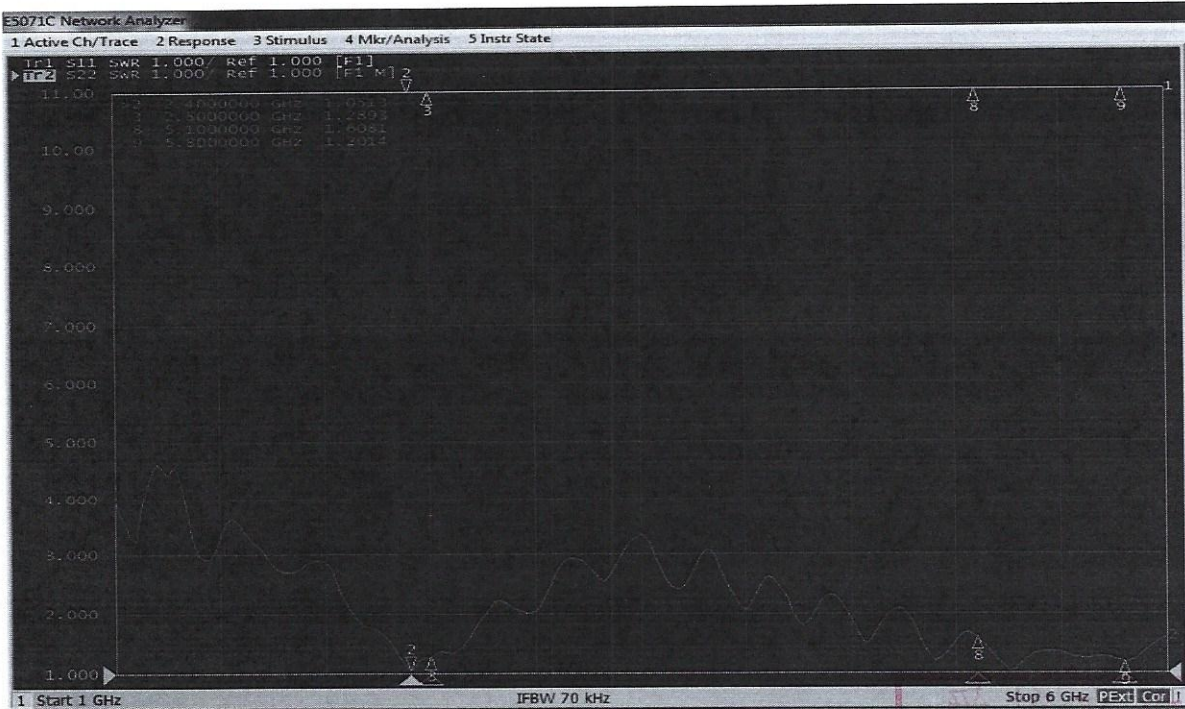
WIFI VSWR

Frequency (MHz)	2400	2500	5100	5800
VSWR	1.05	1.28	1.60	1.20

3.3 Testing data



5G DIV antenna VSWR



WIFI antenna VSWR

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4、Power、Sensiticity Testing

4.1 Testing field

LR Microwave Anechoic Chamber : testing frequency ranges from 400MHz to 6GHz and the 40cm diameter spherical quiet zone, the chamber provides less than -90dB reflectivity from 400MHz—6GHz.

4.2 Testing results

The following table indicates the testing results related to Power and Sensitivity in Microwave Anechoic Chamber, concerning the relative diagram.

4.3 Active testing.

Z2101AX 5G DIV 天线无源效率:

Freq	Gain	Efficiency	Freq	Gain	Efficiency	Freq	Gain	Efficiency
600	-2.3	21	2120	-0.1	35	3860	-1.5	27
610	-1.0	22	2140	-0.9	35	3880	-1.3	26
620	-0.9	24	2160	0.0	36	3900	-1.1	26
630	-1.8	22	2180	0.9	37	3920	-0.9	28
640	-2.6	19	2200	1.0	38	3940	-0.4	28
650	-3.6	16	2220	1.1	41	3960	-0.1	29
660	-4.3	15	2240	1.1	42	3980	-0.2	28
670	-4.8	13	2260	1.1	43	4000	-0.5	28
680	-5.2	12	2280	0.9	42	4020	-0.5	30
690	-5.8	11	2300	0.4	40	4040	0.2	31
700	-6.3	11	2320	0.4	37	4060	1.0	34
710	-7.0	11	2340	0.9	38	4080	1.4	36
720	-6.8	11	2360	0.7	37	4100	1.5	35
730	-7.1	10	2380	0.0	35	4120	1.5	36
740	-7.0	9	2400	-0.4	34	4140	1.3	36
750	-7.0	9	2420	-1.3	34	4160	1.4	37
760	-6.8	9	2440	-1.0	35	4180	1.5	37
770	-6.5	9	2460	-0.4	35	4200	1.2	37
780	-5.9	9	2480	0.1	37	4220	0.6	36
790	-5.4	11	2500	0.4	37	4240	0.2	36
800	-4.0	16	2520	0.3	36	4260	0.3	35
810	-1.6	31	2540	0.0	34	4280	0.5	33
820	-0.8	33	2560	-1.3	30	4300	0.3	33
830	-0.9	28	2580	-1.8	27	4320	-0.2	31
840	-1.4	25	2600	-1.9	25	4340	-0.8	27
850	-1.3	22	2620	-1.5	24	4360	-1.3	24
860	-1.4	20	2640	-1.1	25	4380	-1.9	23
870	-1.1	20	2660	-1.6	25	4400	-2.2	22
880	-1.0	20	2680	-2.0	23	4420	-1.9	23
890	-0.2	22	2700	-2.5	21	4440	-1.8	24
900	0.2	26	3300	-6.4	7	4460	-1.7	25
910	0.7	29	3320	-7.2	6	4480	-2.0	26
920	1.6	33	3340	-8.1	6	4500	-2.1	27
930	2.3	36	3360	-8.0	6	4520	-1.9	28
940	2.4	37	3380	-8.2	6	4540	-1.5	28
950	2.1	35	3400	-8.2	6	4560	-1.2	28
960	1.9	33	3420	-7.6	7	4580	-1.3	27
1700	0.4	40	3440	-7.0	8	4600	-2.1	24
1720	-0.5	37	3460	-6.1	9	4620	-2.4	22

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1740	-0.6	34	3480	-5.4	11	4640	-3.1	20
1760	-0.4	31	3500	-4.9	13	4660	-2.9	18
1780	-0.5	28	3520	-4.1	14	4680	-2.5	16
1800	-0.3	27	3540	-3.5	14	4700	-2.1	17
1820	-0.9	24	3560	-3.9	12	4720	-1.7	18
1840	-1.5	27	3580	-4.4	12	4740	-1.6	19
1860	0.5	40	3600	-4.5	11	4760	-1.5	21
1880	1.3	43	3620	-4.6	11	4780	-0.8	24
1900	2.1	45	3640	-4.7	11	4800	-0.2	26
1920	2.3	48	3660	-4.2	13	4820	0.6	30
1940	1.9	48	3680	-3.1	15	4840	1.1	33
1960	1.8	49	3700	-2.6	18	4860	1.3	33
1980	1.4	48	3720	-1.7	21	4880	1.5	35
2000	0.8	47	3740	-1.4	22	4900	1.3	33
2020	0.8	46	3760	-1.4	23	4920	1.1	32
2040	0.6	44	3780	-1.5	25	4940	1.0	32
2060	0.6	42	3800	-1.4	27	4960	0.6	33
2080	0.6	38	3820	-1.8	28	4980	0.6	34
2100	0.5	36	3840	-1.6	27	5000	0.6	35

Z2101AX WIFI 天线无源效率:

Freq	Gain	Efficiency	Freq	Gain	Efficiency
2400	2.9	53	5360	3.3	56
2410	2.8	52	5380	3.7	58
2420	2.7	50	5400	3.6	57
2430	2.8	49	5420	3.6	57
2440	2.9	48	5440	3.2	55
2450	3.0	49	5460	2.8	54
2460	3.2	50	5480	2.4	53
2470	3.0	52	5500	2.2	51
2480	3.0	54	5520	2.1	49
2490	3.0	56	5540	2.2	50
2500	3.0	56	5560	2.3	53
5100	2.0	55	5580	2.4	53
5120	2.2	56	5600	2.3	53
5140	2.7	55	5620	2.1	51
5160	2.9	57	5640	1.8	50
5180	2.8	57	5660	1.4	48
5200	2.9	59	5680	1.3	50
5220	3.0	60	5700	1.4	49
5240	3.0	58	5720	1.7	48
5260	2.8	58	5740	1.4	47
5280	2.4	58	5760	1.3	49
5300	2.4	56	5780	1.1	49
5320	2.5	54	5800	3.0	49
5340	3.0	57			



Z2101AX 5G 天线有源数据:

Band	TRP			TIS
W1	21.14	21.26	20.88	-109.05
W2	21.07	21.22	20.48	-110.12
W4	17.57	19.44	19.93	-109.29

5G NR	TRP			TIS
N1	21.79	21.65	21.36	-95.53
N2	21.02	21.29	20.51	-95.11
N3	19.15	20.01	19.78	-96.26

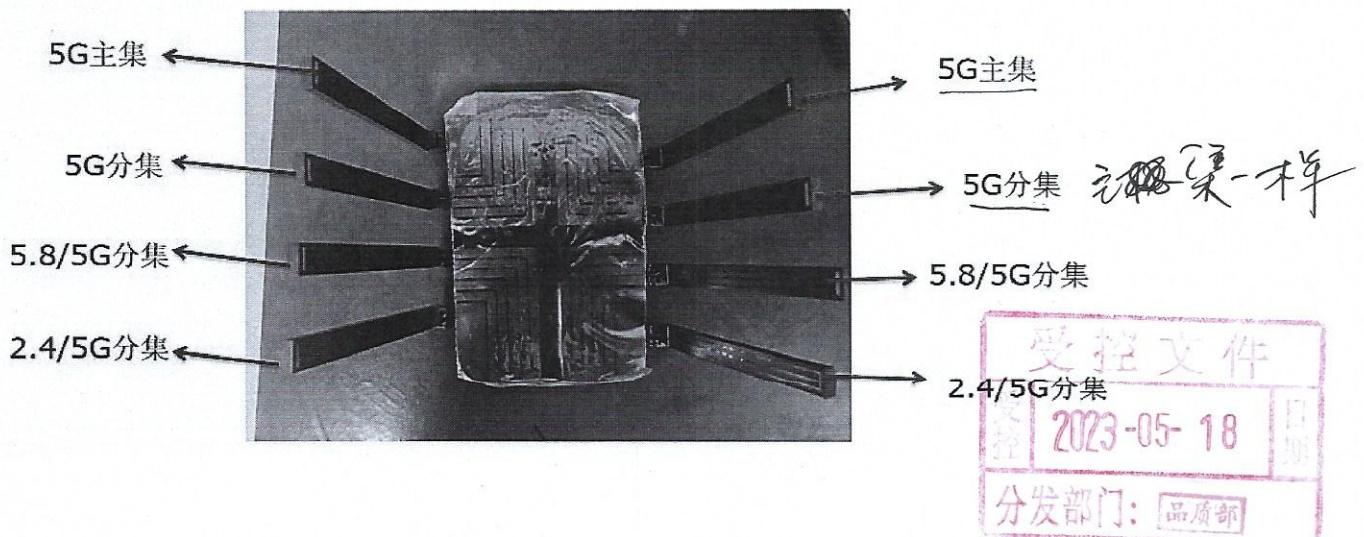
W5	20.71	21.53	21.97	-106.01
W8	21.06	21.34	21.63	-107.02
W19	21.08	20.79	20.3	-105.73
B1	21.67	21.51	21.62	-96.59
B2	21.44	21.74	20.31	-97.69
B3	19.9	21.32	20.17	-97.87
B4	18.69	20.45	21.25	-95.22
B5	21.12	21.54	21.48	-94.46
B7	20.65	20.78	19.92	-95.68
B8	21.42	21.17	20.61	-92.73
B12	20.95	20.77	20.75	-87.55
B13	20.12	20.36	20.52	-84.34
B14	20.15	20.42	20.89	-84.2
B17	20.92	20.86	20.64	-83.28
B18	20.02	20.16	20.39	-93.68
B19	21.45	21.65	22.02	-93.86
B20	21.84	22.16	21.74	-91.02
B25	21.02	21.3	21.32	-99.25
B26	21.03	21.34	21.51	-94.3
B28	18.07	18.25	18.02	-86.24
B30	19.11	19.2	19.32	-91.79
B34(20M)	21.16	21.2	21.25	-93.59
B38(20M)	20.85	19.6	19.48	-90.06
B39(20M)	21.89	21.56	21.75	-91.71
B40(20M)	21.04	20.35	19.26	-86.68
B41(20M)	21.34	20.06	19.39	-90.38
B42(20M)	21.35	21.47	21.44	-95.88
B43(20M)	21.33	20.45	19.5	-94.07
B66	19.65	21.24	20.81	-96.49
B71	20.62	19.89	19.03	-88.73

N5	20.1	20.2	20.31	-92.32
N7	19.63	19.71	19.98	-94.24
N8	19.85	19.38	20.13	-91.43
N12	19.85	20.12	20.01	-86.23
N13	19.25	19.36	20.21	-83.81
N14	19.54	19.4	19.82	-83.25
N18	20.12	20.23	20.13	-92.35
N20	20.23	20.15	20.12	-89.18
N25	21	21.15	21.24	-98.35
N26	19.8	20.02	20.19	-92.36
N28	18.68	18.24	18.29	-85.9
N30	18.17	18.04	18.93	-90.27
N38	20.01	19.72	19.87	-89.36
N40	20.07	20	20.02	-84.52
N41	20.39	20.11	19.05	-91.28
N66	19.63	19.41	19.25	-92.91
N71	20.05	19.83	19.71	-87.35
N75	连不上			
N76	连不上			
N77	22.07	22.1	21.9	-85.15
N78	24.16	23.34	22.2	-87.54
N79	连不上			

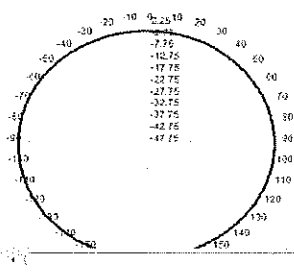
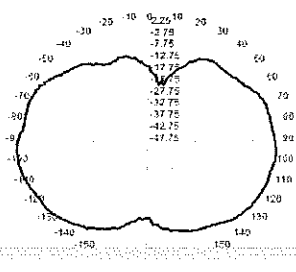
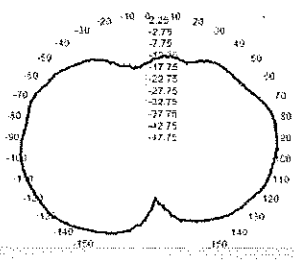
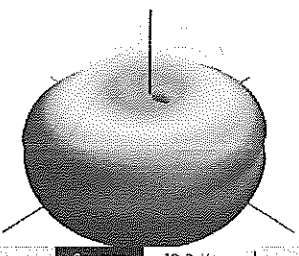
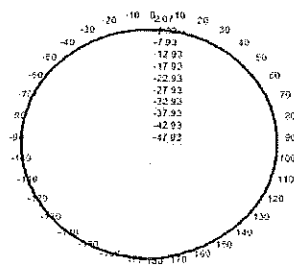
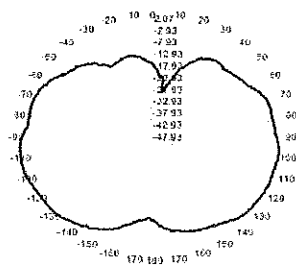
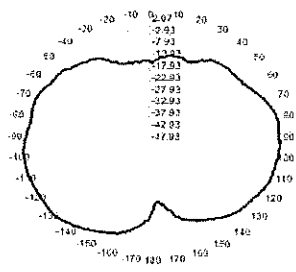
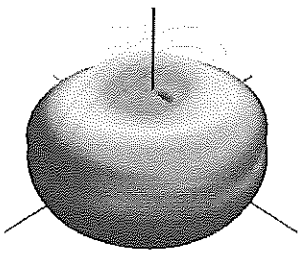
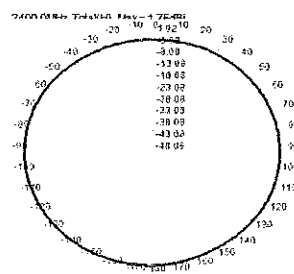
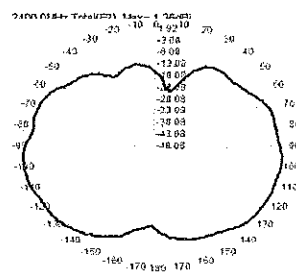
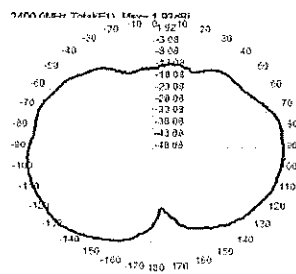
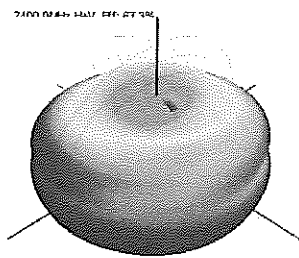
5. Environmental treatment

The environmental treatment of the whole machine is as follows

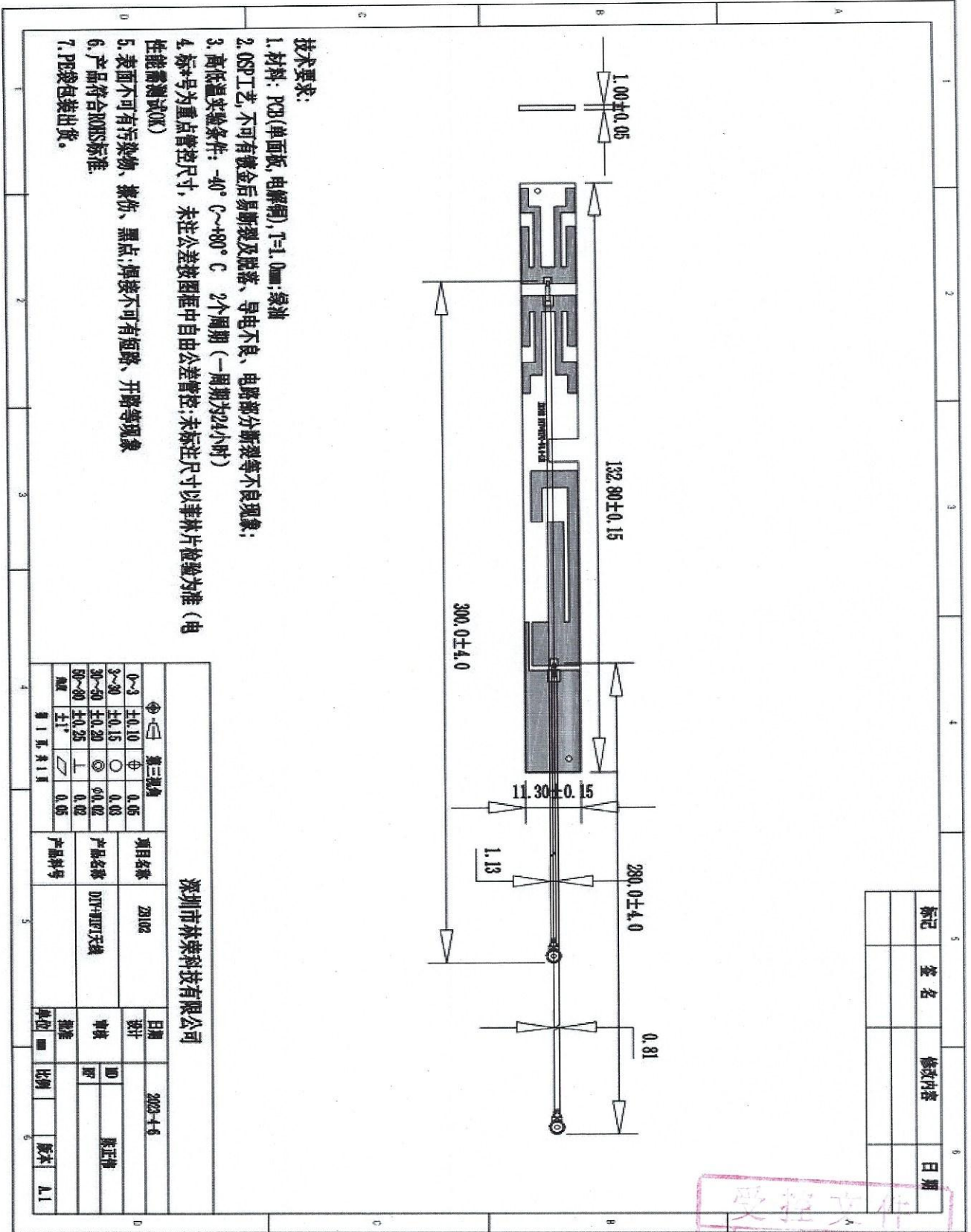
天线摆放示意图



3D Radiated Pattern



6、Mechanical Dimension Drawing





7、Mechanical Dimension Testing report

全尺寸测量报告

Vendor(供应商)		材质名称	Part NO(料号)		Tool Number (编号)		Carv. Number(次数)		Unit(单位)		Quality(品质要求)													
林荣科技		材质牌号	24.03.01.014		/		/		MILLIMETERS <input type="checkbox"/> INCHES		万江华													
日期		2023-5-10		MEASURED DIMENSION(实测尺寸)		% TOLERANCE USED (公差使用百分比)		DISPOSITION				ACCEPTABLE VARIANCE												
DIM. #	DIMENSION	DRAWING ZONE	+TOL.	-TOL.	NOTE	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	SAMPLE 5	UPPER	LOWER	0%-25%	25%-50%	50%-75%	75%-100%	100%+	Re-Measure	Accept	Fix Tool	Accept With Variance	DIMENSION	+TOL.	-TOL.
1	280.00		4.00	(4.00)		282.00	280.00	278.00	281.00	282.00	50%	-50%	X	X								280.00	282.00	278.00
2	132.80		0.15	(0.15)		132.78	132.77	132.80	132.82	132.79	13%	-20%	X	X								132.80	132.82	132.77
3	11.30		0.20	(0.20)		11.47	11.46	11.45	11.48	11.33	90%	0%	X	X								11.30	11.48	14.33
4	0.81		0.05	(0.05)		0.83	0.84	0.83	0.85	0.83	80%	0%	X	X								0.81	0.85	0.83
5	300.00		4.00	(4.00)		302.00	300.00	301.00	299.00	302.00	50%	-25%	X	X								300.00	302.00	299.00
6	1.13		0.05	(0.05)		1.12	1.13	1.14	1.15	1.12	40%	-20%	X	X								1.13	1.15	1.12
7	1.00		0.05	(0.05)		1.02	1.03	1.03	1.02	1.02	60%	0%	X	X								1.00	1.03	1.02
8	以下空白																							
9																								
10																								
11																								
12																								
13																								

备注: 除了上述标注的填写内容外, 需输入的内容:
 1. DIMENSION, +TOL, -TOL, SAMPLE1, SAMPLE2, SAMPLE3
 2. 注意1中描述的内容输入时, 请:
 a. 在新值BRANCHESH中若使用百分比中, 无论是否PRESET是100%, 须:
 (1) 按在输入数据是否输入错误; (2) 测量数据是否操作有误差或是仪器测量不准确; (3) 测量时何是否不适当; (4) 排除了(1)-(3)外, 仍然>100%, 请设计师对每个尺寸的面作出选择即从 "Re-measure, Accept, No Tool, Accept Variance" 中选一; 若是选Accept with variance, 必须完成后面的Dimension, +TOL, -TOL;
 b. DIMENSION栏中的即尺寸同一性中的DIM.#必须与图面上的一致; 同时注意, 在作CPK的尺寸的编号与公差尺寸测量报告中的尺寸编号必须是一致的, 且CPK尺寸必须使用符号标注, 此标注号必须表示的意思是测量尺寸为重点管控尺寸, 要做CPK!
 c. 测量工具代号Measure No.: A=Callipers(0.00) B=micrometer(0.000) C=Pin Gauge(0.000) D=High Gauge(0.000) E=MM(0.000) F=Plug Gauge(0.00) G=R Gauge(0.0) I=Deep Gauge(0.000)

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8、Packaging standard

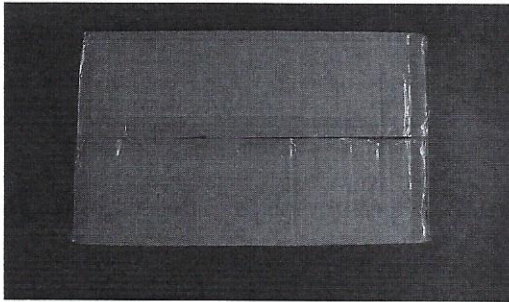
包装说明：具体包装数量以实物为准，图片只显示包装的方式，并非此项目实物。



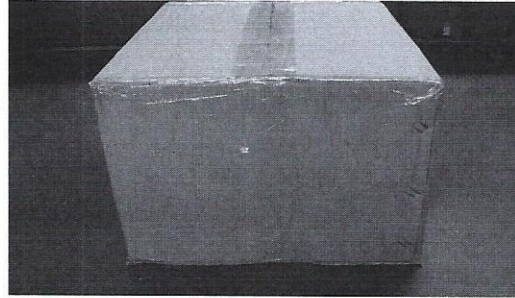
天线用 PE 袋包装（100pcs/包）
The top cover board, with PE film packaging



防潮防水 PET 袋封装，放于纸箱内
Moistureproof waterproof PET bag packaging,
Put in the cartons



纸箱用胶带封口
Carton sealing with duct tape



包装箱整箱外观（1000pcs/箱）
Cases appearance

