

样品承认书

SAMPLE SPECIFICATION FOR APPROVAL

供应商名称 SUPPLIER	Sunnyway Technology Co.,Ltd
客户名称 CUSTOMER	FAIOT Co., LTD
物料名称 DESCRIPTION	FT01
物料规格 SPECIFICATION	FT01-BRACKET-ANT-3
物料编码 CUSTOMER PART NO	329900000108
供应商审核(公章) SUPPLIER APPROVAL	
客户审核 CUSTOMER APPROVAL	
承认日期 APPROVAL DATE	23.9.27

Check			
Baseband	RF	ME	ID
Resources	SQE	PQM	

Catalogue

1、 Sample

need ☒ ; no need ☐

2、 Specifications, drawings, material reports physical property table, related to fixture testing with SOP

paper archive ☒ ; electronic document ☒

3、 Visual inspection report

paper archive ☒ ; electronic document ☒

4、 Dimension report

paper archive ☒ ; electronic document ☒

5、 Functional test report

paper archive ☒ ; electronic document ☒

6、 Reliability test report

paper archive ☒ ; electronic document ☒

7、 Key dimensions CPK

paper archive ☒ ; electronic document ☒

8、 Flow chart

paper archive ☒ ; electronic document ☒

9、 Manner of packing

paper archive ☒ ; electronic document ☒

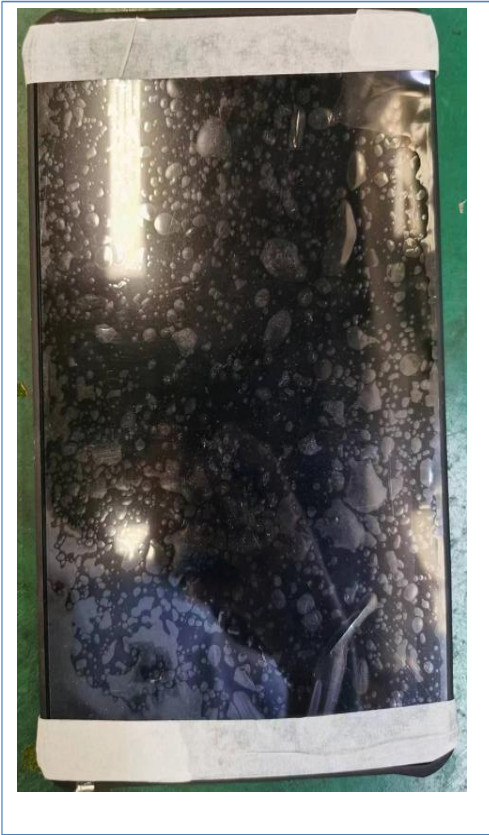
10、 Environmental information

Substance composition questionnaire ☒ ; RoHS ☒ ; Reach ☒ ; halogen-free ☒

comment: need ☒ ; no need ☐

1. Project information

Machine information



Antenna information

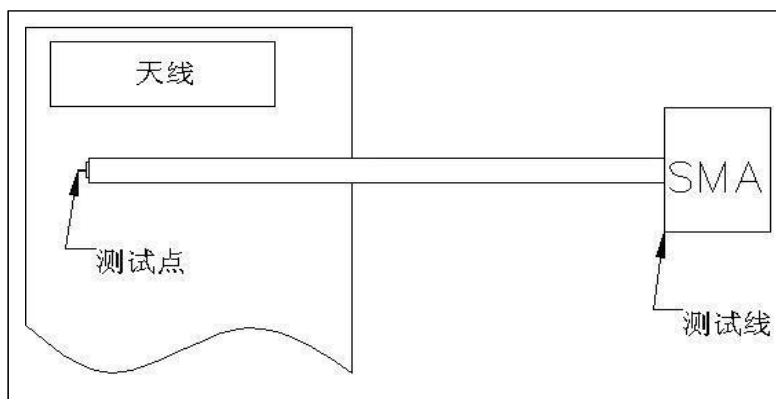
	Version
ANT3	ANT3-V1.0
ANT5	ANT5-V1.0

Note: The customer finally verified that the antenna performance prototype was retained in our company for at least one year, which is convenient for analysis and solution to abnormal situations in antenna mass production.
Ensure antenna shipment quality.

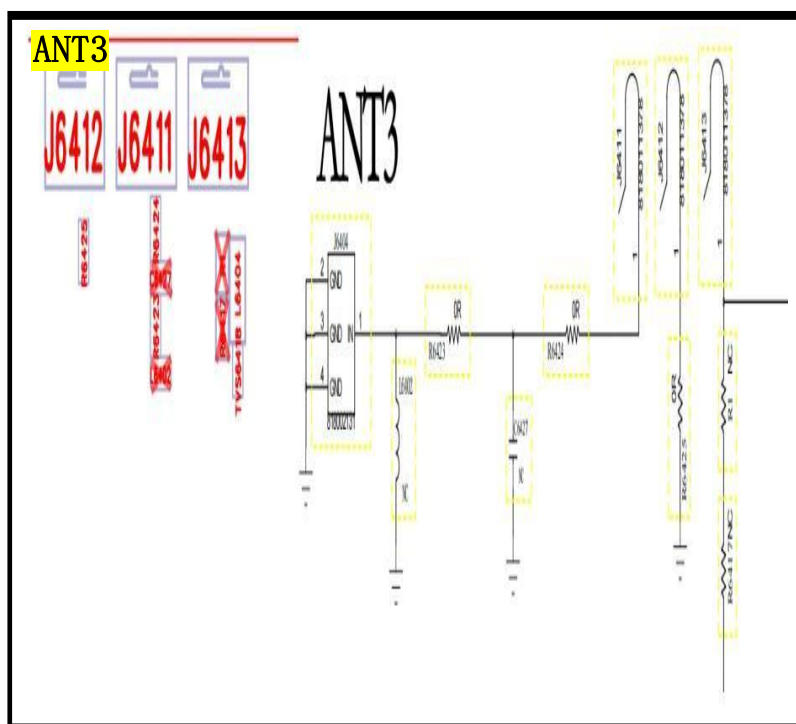
2. Test fixtures

Purpose: To test the passive parameters of the antenna as accurately as possible.

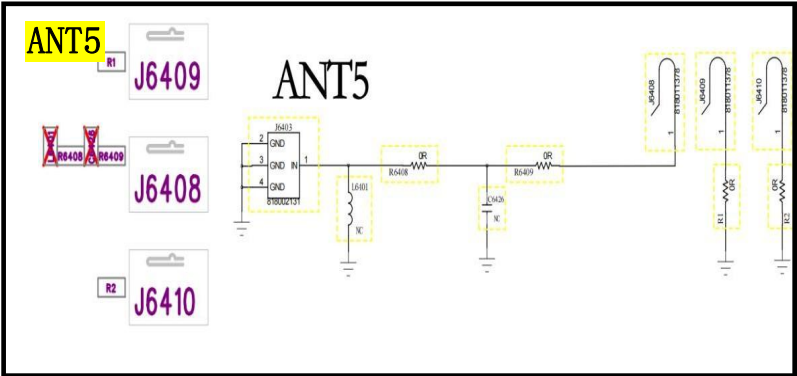
How to make: The prototyping mechanism is made of a 50 ohm coaxial cable, one end is connected to the test point at the back of the matching circuit of the prototype motherboard (the front of the RF test hole), and the other end is connected to the SMA connector. The schematic diagram is as follows:



3. Matching circuits



ANT3		
location	value	
J6404	818002131	
L6402	NC	
R6423	1.5nh	
C6427	NC	
R6424	33p	
J6411	818011378	
J6412	818011378	
J6413	818011378	
R6425	0 Ω	
R1	0 Ω	
R6417	33p	



ANT5		
location	value	
J6403	818002131	
L6401	NC	
R6408	0 Ω	
C6426	NC	
R6409	0 Ω	
J6408	818011378	
J6409	818011378	
J6410	818011378	
R1	0 Ω	
R2	0 Ω	

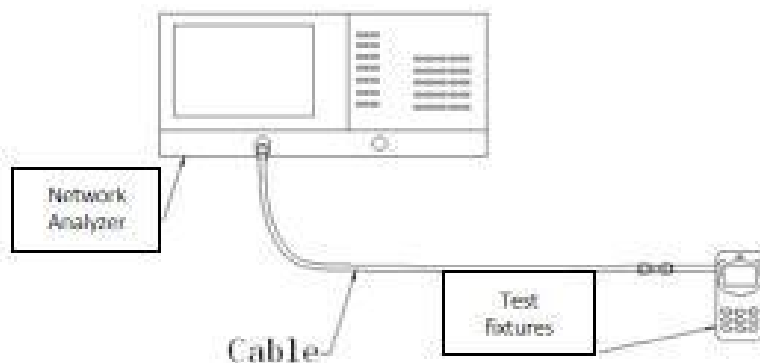
4. S11 test

1. S11 Test Method Description

Test Equipment: Network Analyzer (E5071C)

Test method: A 50 ohm CABLE cable is derived from the instrument test port, and the SMA connector of the prototype is connected after calibration using the calibrator to record the return loss and standing wave ratio corresponding to the relevant frequency point.

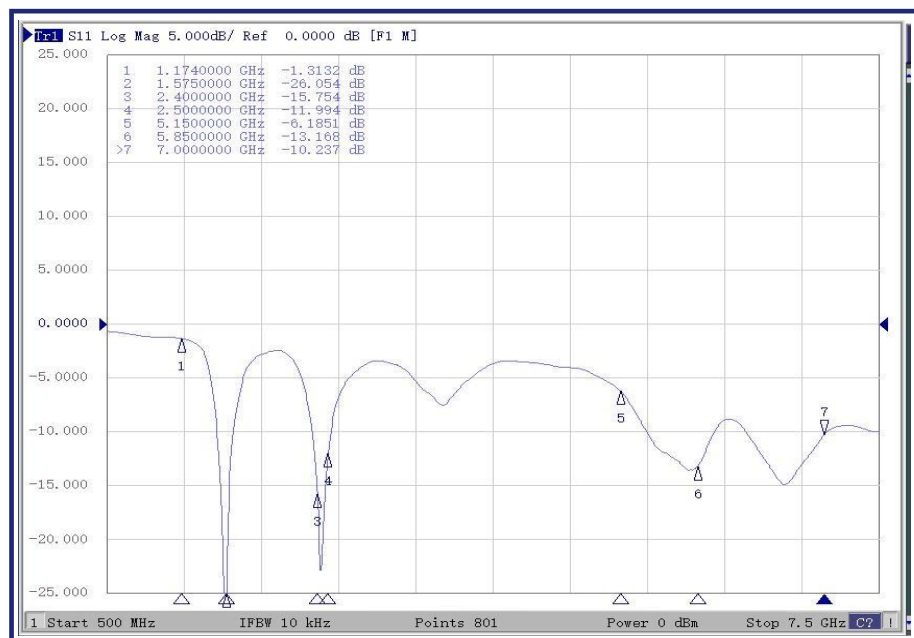
The test diagram is as follows:



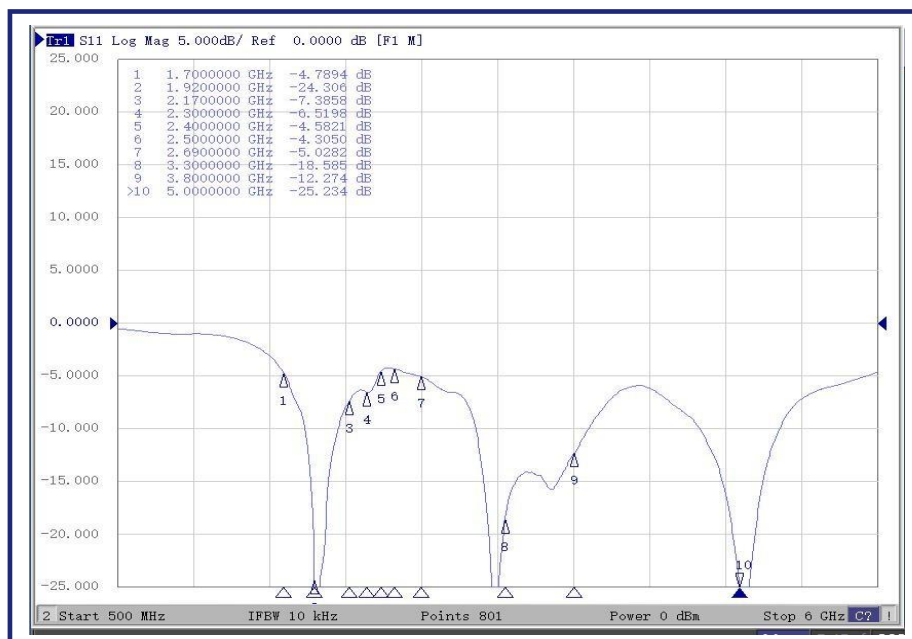
Test the schematic

4.2 S11 parameter

ANT3



ANT3	
frequency (MHz)	callback loss
1575.42	-26.05
2400	-15.75
2500	-11.99
5150	-6.18
5850	-13.16
7000	-10.23



ANT5	
frequency (MHz)	callback loss
1700	-4.78
2170	-7.38
2300	-6.51
2500	-4.3
2690	-5.02
3300	-18.58
5000	-25.23

5 Darkroom test data

Test system: Shielded darkroom

Test environment: temperature

22°C±3°C, humidity

50%±15%

Test equipment: When testing passive data, use the

Network Analyzer

Agilent E5062C When testing

active data, the Comprehensive

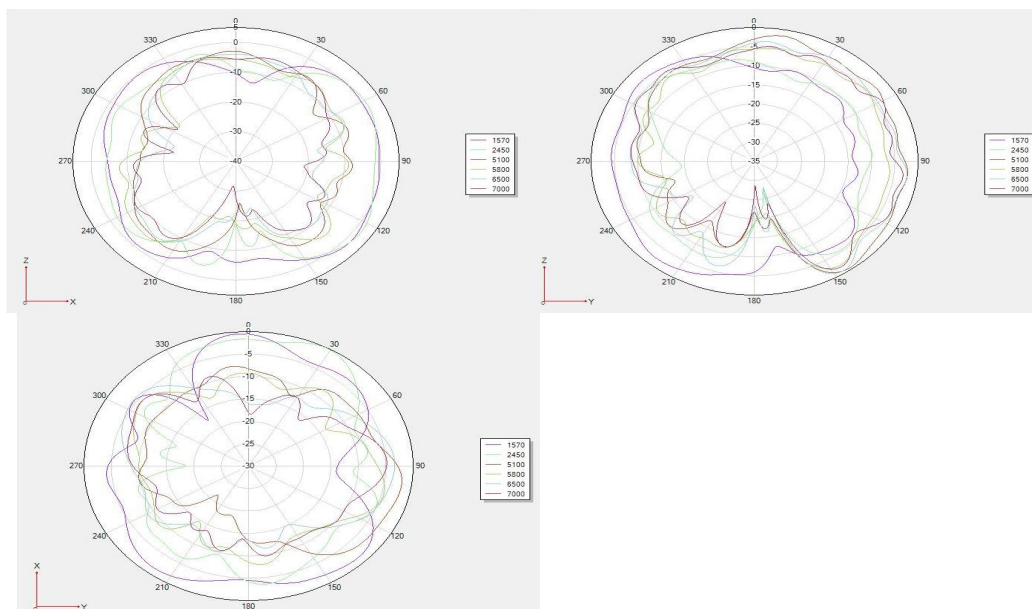
Tester Agilent 8960

/CMW500/E4438C is used

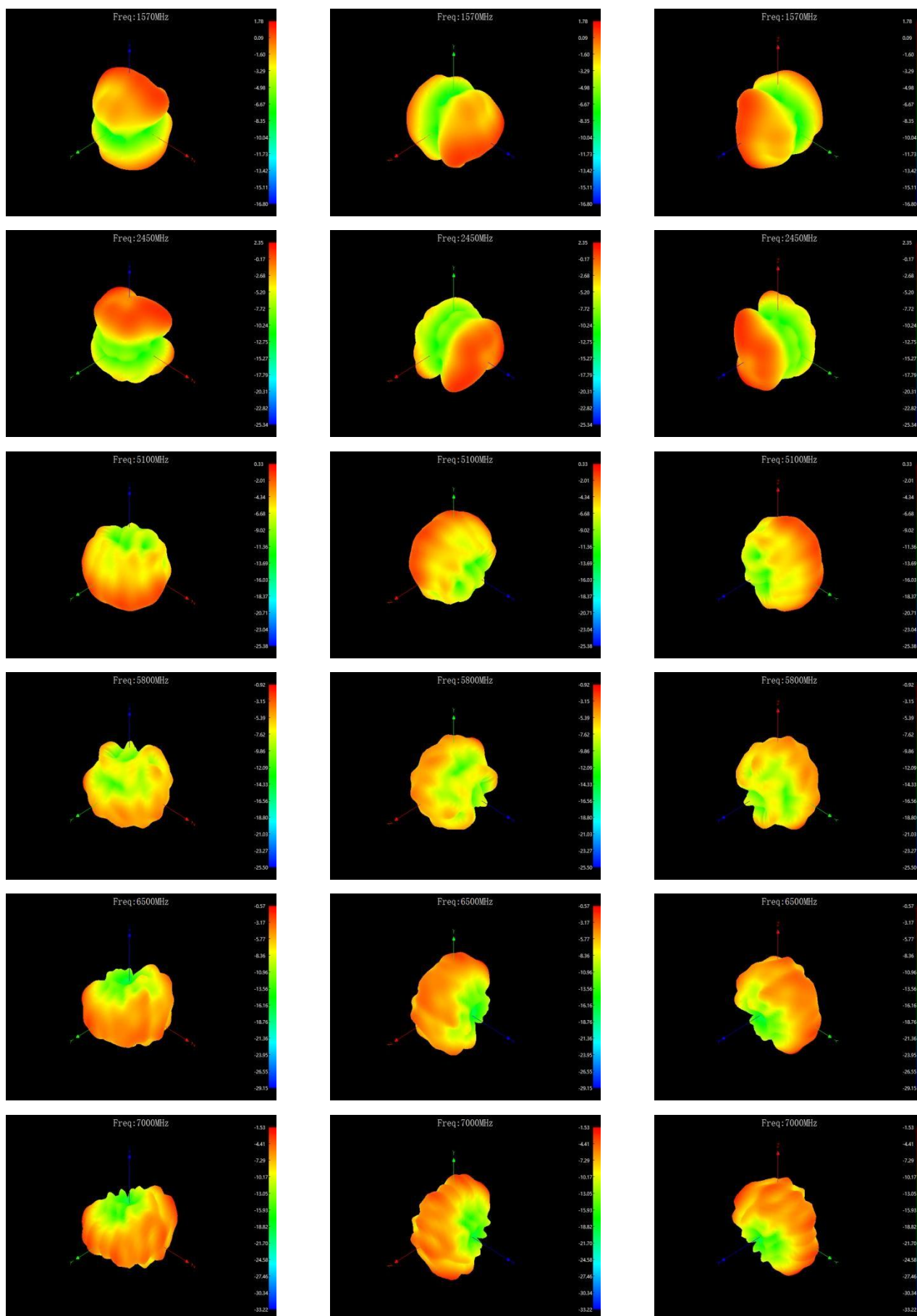
5.1 Passive test data

ANT3							
Freq.	Effi	Effi	Gain	5100	5100	5100	5100
(MHz)	(dB)	(%)	(dBi)	5200	5200	5200	5200
1550	-3.88	40.93	1.98	5300	-5.97	25.29	-0.68
1560	-3.65	43.15	1.91	5400	-5.71	26.85	-0.44
1570	-3.42	45.50	1.78	5500	-5.77	26.49	-0.03
1580	-3.39	45.81	1.61	5600	-6.23	23.82	-0.73
1590	-3.60	43.65	1.09	5700	-6.59	21.93	-1.41
1600	-3.90	40.74	0.47	5800	-6.59	21.93	-0.92
				5900	-7.18	19.14	-0.07
2400	-4.45	35.89	2.70	6000	-6.92	20.32	1.14
2410	-4.24	37.67	1.96	6100	-6.85	20.65	0.86
2420	-4.06	39.26	2.42	6200	-6.57	22.03	0.99
2430	-4.27	37.41	2.76	6300	-6.21	23.93	0.09
2440	-4.29	37.24	1.68	6400	-6.58	21.98	-0.88
2450	-4.16	38.37	2.35	6500	-6.44	22.70	-0.57
2460	-4.38	36.48	2.73	6600	-6.21	23.93	-0.48
2470	-4.36	36.64	2.15	6700	-6.78	20.99	-0.76
2480	-4.59	34.75	2.52	6800	-7.54	17.62	-1.94
2490	-4.74	33.57	2.47	6900	-7.10	19.50	-1.76
2500	-4.61	34.59	2.22	7000	-6.86	20.61	-1.53

ANT3 antenna pattern



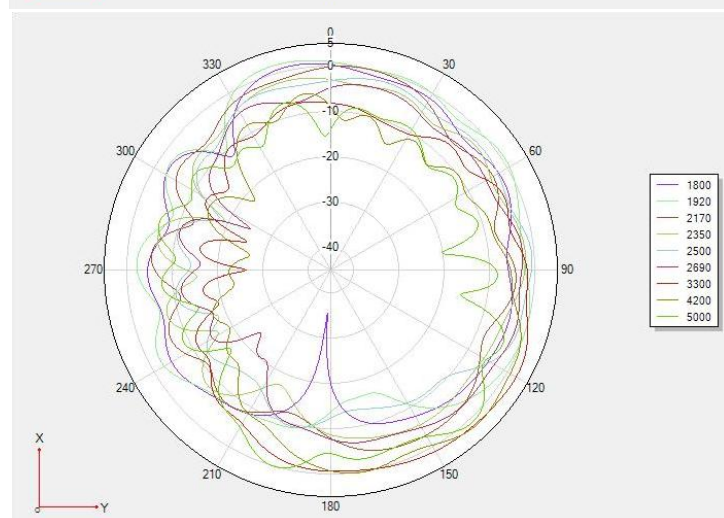
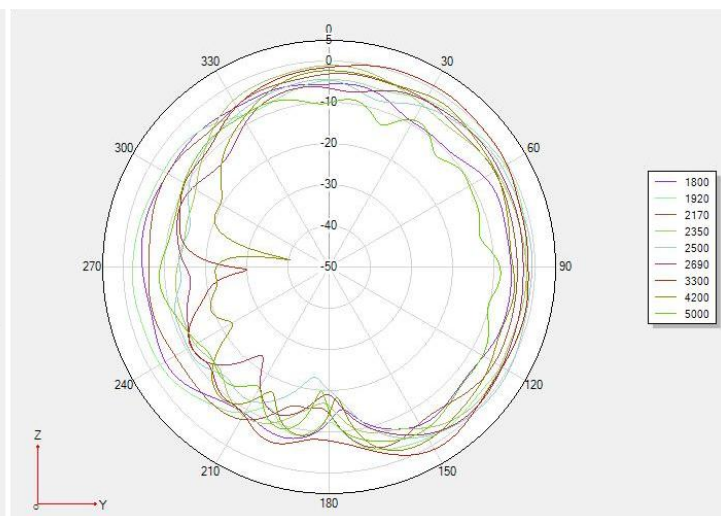
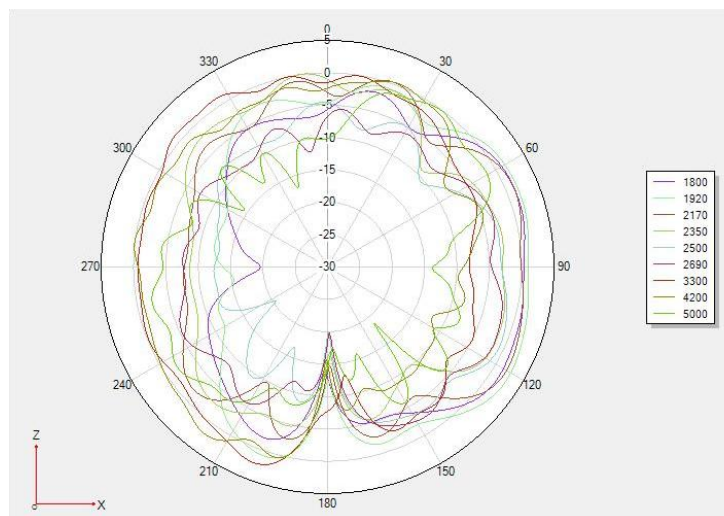
Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition
ANT3 antenna Apple chart



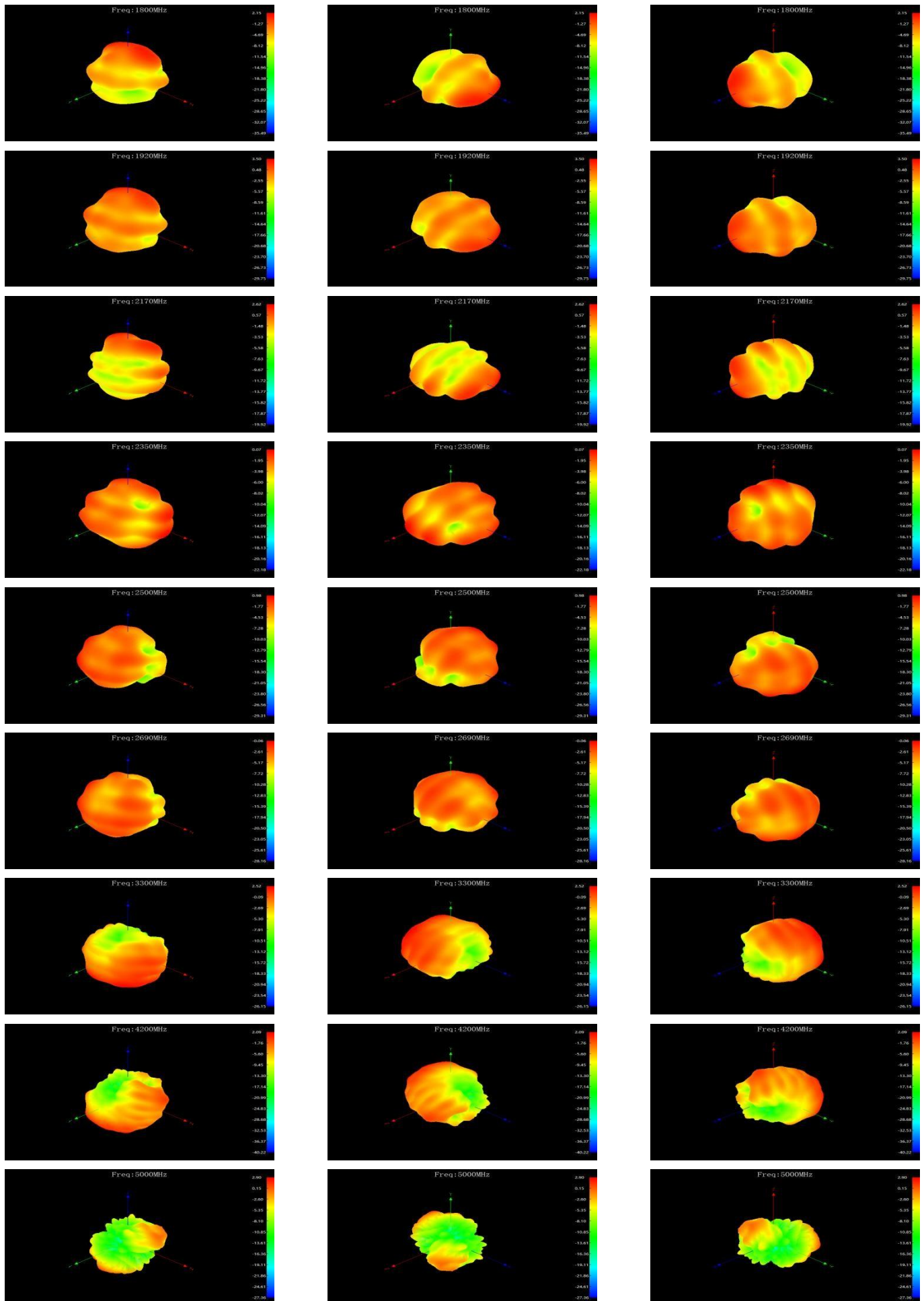
Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition
Antenna ANT5 passive efficiency

ANT5							
Freq.	Effi	Effi	Gain	2300	-5.64	27.29	1.03
(MHz)	(dB)	(%)	(dBi)	2310	-6.00	25.12	-0.09
1710	-7.44	18.03	-0.24	2320	-6.14	24.32	-0.17
1720	-7.13	19.36	0.06	2330	-6.30	23.44	0.00
1730	-6.73	21.23	0.60	2340	-6.23	23.82	0.54
1740	-6.30	23.44	1.01	2350	-6.18	24.10	0.07
1750	-5.96	25.35	1.16	2360	-6.16	24.21	0.33
1760	-5.61	27.48	1.36	2370	-6.21	23.93	0.76
1770	-5.33	29.31	1.58	2380	-6.21	23.93	0.39
1780	-5.10	30.90	1.63	2390	-6.20	23.99	0.94
1790	-4.87	32.58	1.77	2400	-6.46	22.59	0.60
1800	-4.70	33.88	2.15	2500	-6.56	22.08	0.98
1810	-4.50	35.48	2.45	2510	-6.55	22.13	1.02
1820	-4.29	37.24	2.51	2520	-6.53	22.23	0.64
1830	-4.15	38.46	2.52	2530	-6.53	22.23	0.55
1840	-4.05	39.36	2.62	2540	-6.32	23.33	0.16
1850	-3.96	40.18	2.82	2550	-6.40	22.91	-0.47
1860	-3.83	41.40	3.01	2560	-6.29	23.50	0.38
1870	-3.76	42.07	3.21	2570	-6.25	23.71	-0.02
1880	-3.72	42.46	3.42	2580	-5.98	25.23	0.02
1890	-3.72	42.46	3.41	2590	-6.08	24.66	0.05
1900	-3.71	42.56	3.30	2600	-6.21	23.93	-0.37
1910	-3.74	42.27	3.29	2610	-6.04	24.89	-0.30
1920	-3.77	41.98	3.50	2620	-5.89	25.76	-0.23
1930	-3.77	41.98	3.56	2630	-5.84	26.06	-0.32
1940	-3.75	42.17	3.42	2640	-5.82	26.18	-0.47
1950	-3.72	42.46	3.34	2650	-5.66	27.16	-0.57
1960	-3.71	42.56	3.24	2660	-5.55	27.86	-0.80
1970	-3.61	43.55	3.27	2670	-5.42	28.71	-0.34
1980	-3.53	44.36	3.24	2680	-5.65	27.23	-0.76
1990	-3.51	44.57	3.44	2690	-5.46	28.44	-0.06
2000	-3.62	43.45	3.42	3300	-3.49	44.77	2.52
2010	-3.86	41.11	3.24	3400	-3.79	41.78	3.29
2020	-3.80	41.69	3.24	3500	-3.95	40.27	3.63
2030	-4.02	39.63	3.60	3600	-4.30	37.15	3.08
2040	-4.11	38.82	3.59	3700	-4.47	35.73	2.54
2050	-4.04	39.45	3.66	3800	-4.47	35.73	2.16
2060	-3.96	40.18	4.20	3900	-4.41	36.22	2.65
2070	-4.00	39.81	3.93	4000	-4.37	36.56	1.96
2080	-3.96	40.18	4.05	4100	-4.10	38.90	2.19
2090	-4.08	39.08	3.77	4200	-4.12	38.73	2.09
2100	-4.03	39.54	4.45	4300	-4.76	33.42	2.14
2110	-4.25	37.58	4.05	4400	-4.57	34.91	3.20
2120	-4.30	37.15	4.08	4500	-4.16	38.37	2.86
2130	-4.52	35.32	3.86	4600	-4.38	36.48	2.53
2140	-4.55	35.08	3.58	4700	-3.93	40.46	3.34
2150	-4.64	34.36	3.45	4800	-3.63	43.35	3.95
2160	-4.86	32.66	3.59	4900	-3.83	41.40	3.55
2170	-4.96	31.92	2.62	5000	-4.26	37.50	2.90

ANT5 antenna pattern



Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition
ANT5 antenna Apple chart



5.2 Active test data

Main antenna active testdate (Free space, screen off)

			standard		sample verification	
	Band	channel	TRP	TIS	TRP	TIS
GSM	GSM_850	L	26	-102.5	28.02	-105.12
		M			28.89	-104.72
		H			28.84	-104.47
	GSM_900	L	26	-102.5	27.54	-105.06
		M			27.44	-104.52
		H			27.51	-104.03
	DCS_1800	L	25	-105	25.14	-106.42
		M			25.02	-106.31
		H			25.39	-106.13
	PCS_1900	L	25	-105	25.18	-106.38
		M			25.55	-106.28
		H			25.42	-106.21
WCDMA	WCDMA_B1	L	19	-106	19.71	-105.8
		M			20.12	-106.23
		H			20.32	-106.29
	WCDMA_B2	L	19	-106	18.92	-105.77
		M			18.68	-106.05
		H			19.13	-106.38
	WCDMA_B5	L	18	-104	19.28	-105.83
		M			19.56	-105.61
		H			19.76	-105.23
	WCDMA_B8	L	17	-104	18.82	-105.71
		M			19.06	-105.53
		H			19.24	-105.72

5.2 Active test data

Main antenna active testdate (Free space, screen off)

			standard		sample verification	
	Band	channel	TRP	TIS	TRP	TIS
LTE-FDD	FDD_B1	L	19	-93.5	19.45	-95.8
		M			20.04	-96.04
		H			20.45	-95.44
	FDD_B2	L	20	-93.5	20.58	-94.78
		M			20.57	-95.44
		H			20.68	-95.25
	FDD_B3	L	19	-93.5	20.07	-94.92
		M			20.55	-95.64
		H			20.67	-95.88
	FDD_B4	L	20	-93.5	20.61	-95.33
		M			20.81	-95.78
		H			20.66	-93.79
	FDD_B5	L	18	-93.5	19.33	-94.52
		M			19.55	-94.72
		H			19.53	-93.72
	FDD_B7	L	18.5	-93.5	20.5	-94.83
		M			20.41	-95.41
		H			20.71	-94.44
	FDD_B8	L	17	-91	19.62	-92.94
		M			19.5	-92.98
		H			19.03	-92.41
	FDD_B12	L	18	-92.5	19.37	-93.58
		M			19.68	-93.62
		H			19.71	-93.81
	FDD_B13	L	18	-93.5	18.55	-94.75
		M			18.69	-94.21
		H			18.72	
	FDD_B17	L	18	-90.5	19.06	-92.44
		M			19.23	-92.62
		H			19.55	-92.31
	FDD_B20	L	17	-91	18.69	-93.05
		M			18.77	-93.18
		H			18.78	-92.8
	FDD_B28	L	17	-91	18.79	-93.06
		M			18.82	-93.12
		H			18.92	-93.09
	FDD_B66	L	20	-94.5	20.21	-95.75
		M			20.36	-95.82
		H			20.47	-95.65
	FDD_B71	L	17	-90.5	18.43	-91.25
		M			18.62	-91.58
		H			18.58	-91.68

5.2 Active test data

Main antenna active testdate (Free space, screen off)

			standard		sample verification	
	Band	channel	TRP	TIS	TRP	TIS
LTE-TDD	TDD_B38	L	18.5	-93.5	19.14	-93.59
		M			19.74	-93.55
		H			20.23	-93.63
	TDD_B39	L	19	-93	20.34	-94.11
		M			20.32	-94.17
		H			20.33	-93.88
	TDD_B40	L	18.5	-93.5	19.22	-93.9
		M			19.36	-94.08
		H			19.43	-93.57
	TDD_B41	L	18.5	-93.5	19.57	-94.14
		M			19.92	-94.23
		H			20.13	-93.59

5.2 Active test data

Main antenna active testdate (Free space, screen off)

			standard		sample verification	
	Band	channel	TRP	TIS	TRP	TIS
NR-FDD	N1	L	19	-93.5	20.57	-94.72
		M			20.88	-95.03
		H			20.77	-94.47
	N2	L	20	-93.5	20.4	-94.22
		M			20.43	-95.34
		H			20.34	-94.11
	N3	L	19	-93.5	19.82	-93.72
		M			20.13	-93.76
		H			20.86	-94.55
	N5	L	18	-93.5	19.29	-93.27
		M			19.25	-94.46
		H			19.06	-93.26
	N7	L	18.5	-93.5	20.78	-94.71
		M			20.47	-95.22
		H			20.23	-94.33
	N8	L	17	-91	18.6	-92.83
		M			18.21	-93.28
		H			18.07	-92.35
	N12	L	18	-92.5		
		M			18.62	-93.05
		H				
	N28	L	17	-91	18.59	-92.15
		M			19.14	-92.04
		H			19.26	-92.05
	N66	L	20	-94.5	20.87	-95.61
		M			20.92	-95.65
		H				
	N71	L	17	-90.5	18.33	-90.51
		M			18.43	-90.68
		H			18.51	-91.21
NR-TDD	N41	L	21	-87	21.16	-88.61
		M			21.05	-88.85
		H			21.22	-88.64

5.2 Active test data

NSA active test data (Free space, screen off)

	Band	channel	TRP	TIS	TRP	TIS
NR-TDD	N77	L	21	-85	21	-88.82
		M			20	-89.03
		H			20.82	-89.33
	N78	L	20	-85	21.13	-88.25
		M			20.24	-88.39
		H			19.29	-89.65
	N79	L	20	-85	21.9	-89.67
		M			21.86	-89.66
		H			21.76	-88.15

Triple three in one triad ternion active test data (Free space, screen off)

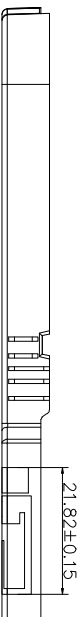
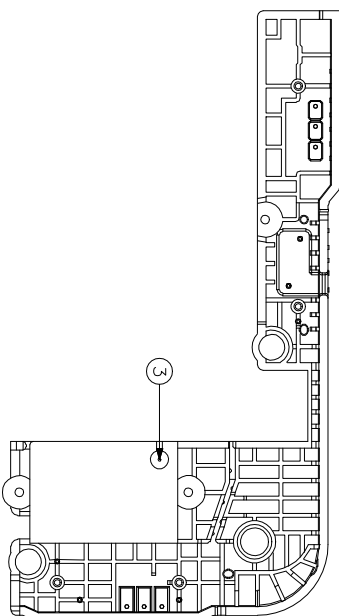
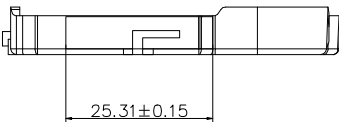
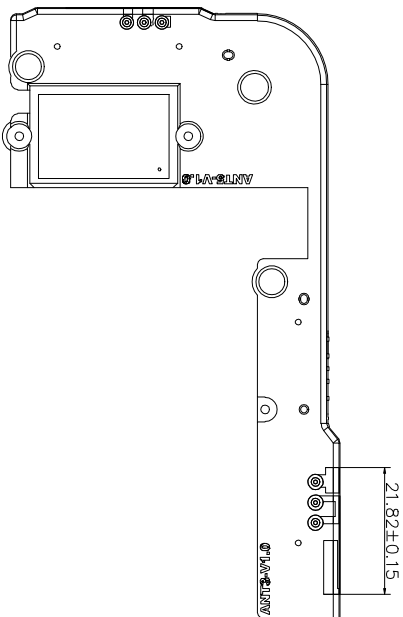
Band	Channel	FREQ (MHz)	OTA (dBm)合路		
			SPEC (dBm)	TRP (dB)	TIS (dB)
2.4G 802.11B-11Mbps	1	2412	TRP $\geq 16\text{dBm}$ TIS $\leq -83.5\text{dBm}$	16.05	
	6	2437		17.17	
	11	2462		16.55	-84.01
5.8G 802.11A-54Mbps	36	5150	TRP $\geq 12.5\text{dBm}$ TIS $\leq -69.5\text{dBm}$	13.48	
	149	5500		12.59	
	169	5850		13.69	-70.1
GPS-L1	多星追踪	1575.42	TIS	-146.43	

6. Mass production antenna indicators

When the antenna is mass-produced, the standing wave ratio is used as the mass production test standard. According to the differences in the project itself, the following criteria are given:

frequency (MHz)	mass production standard
ANT3	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1
ANT5	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1

ROHS、REACH



由 Autodesk 教育版产品制作

Technical requirement

1. Shipping and packaging requirements: (pallet packaging and shipping)
2. LDS surface has no sensitive scratch, leakage and overflow plating. (Due to plating process antenna surface will appear non-inductive scratches);
3. With * as the key size, the unmarked tolerance size is plus or minus 0.15MM;
4. The copper plating thickness of LDS antenna is $8\mu\text{m}$ – $12\mu\text{m}$, and the nickel plating thickness is $3\mu\text{m}$ – $5\mu\text{m}$. The salt spray has been tested for 48H.
5. Electroplating material: copper-nickel
6. According to the general requirements
7. Products meet the requirements of ROHS and REACH.

③	Damping cloth	SH220803B12-11	Damping cloth	black	1
②	bracket	SH231711B02-2	DX11355	black	1
①	LDS	SH231711B04-2		material color	1
numble name Part Number materials color quantity					

edition	modify content	modify	date

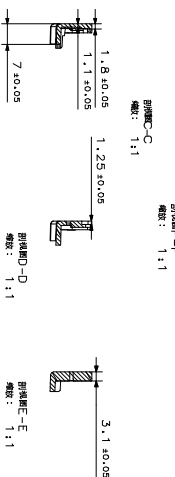
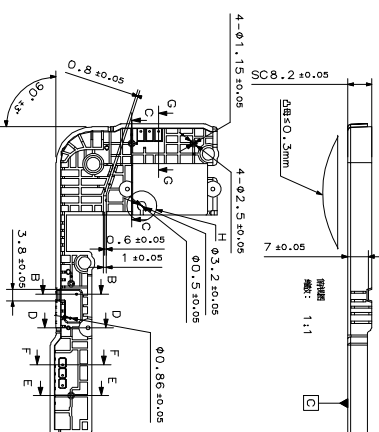
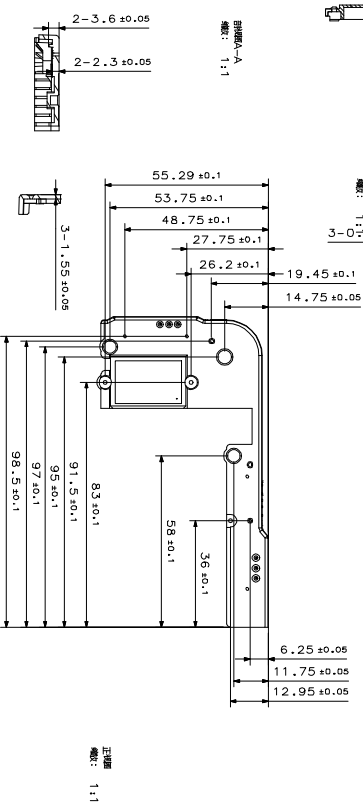
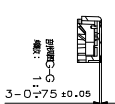
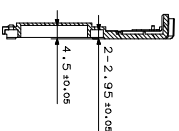
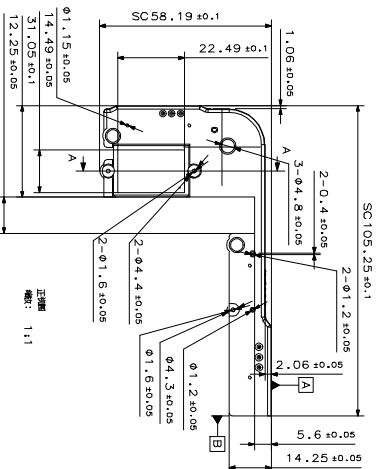
Sunnyway Technology Co.,Ltd

	PART NAME: LDS FT01 (ANT3/ANT5)	DATE: 2023.6.19
TOLERANCE X.X ±0.25 .XX ±0.20 .XXX±0.05 ANGULAR $\leq \pm 0.5^\circ$	PART NO: SH231711B89-2	DRAWN: ZHANGYU
	MATERIAL: materials	CHECKED: YUJIANG
	FINISHING:	APPROVED:
UNIT: mm	COLOUR:	SCALE: 1:1
		REV: 7A

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edition	modify content	modify	date



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Technical requirements:

1. The drawing size is used to check the shape, function and assembly of the parts without spraying, and the main size is referred to the 3D Pro/E parts drawing;
2. The key dimensions marked with * should be checked for each shipment and Quality for CP/CPK under normal circumstances
3. The CP value must be greater than 2.0 and the CPK value must be greater than 1.33. The first piece inspection is required before each batch production.
4. Material life requirements according to IEC62059 standard, PC-VAS T65.
5. The height difference between the thimble, the inclined top, and the plane where it is located: negative 0.05MM for transparent parts, negative 0.1MM for non-transparent parts
6. Please refer to Class B of the free tolerance table for control without tolerance;
7. Product appearance, clean appearance, no shrinkage, lack of glue, pattern, no impurities, no raw edge;
8. The Angle of un.injected drawing die is 1.0-1.5 degrees (within 0.15MM after drawing die), and the R angle is 0.2MM
9. The product meets the standards of on-board projects;

自由公差帶				Sunnyway Technology Co.,Ltd					
	A	B	C						
0-6		±0.07±0.10				PART NAME:	bracket-2	DATE:	2023. 8. 7
>6-18		±0.14±0.13				FT01			
>18-30		±0.12±0.15				PART NO:	SH231711B02-2	DRAWN:	ZHANGYU
>30-50		±0.14±0.20				MATERIAL:	PC sabic DX11355	CHECKED:	YUJIANG
>50-80		±0.12±0.25							
>80-120		±0.25±0.30							
>120-160		±0.31±0.35							
>160-200		±0.37±0.43							
>200-250		±0.45±0.50							
						TOLERANCE			
					ANGULAR	≤ ±0.5°			
UNIT: mm					COLOUR:	SCALE: 1:1		REV:	RA

Sunnyway Technology Co.,Ltd

Outgoing inspection record

customer name	广翼	project name	FT01		Part Number	SH23171IB89-2		color
order number								silver
shipping Qty.			sampling plan	AQL	AC	RE	the quantity of bad quality	judge
sampling quantity			Inspection sampling standard	0.4			0	OK
				1.0			0	OK
inspection item:								
appearance:								判定
plastic parts	The surface is smooth and clean, without missing materials, no peeling, scratches, deformation, shrinkage and other phenomena							OK
金属片	表面平整清洁、无划痕、压伤、变形、缺料、少孔、偏位等现象							/
FPC	表面平整清洁、无划痕、压伤、露铜、溢胶、破损、冲形不良等现象							/
组装件	弹片与壳料不可有间隙（0.30MM以内）、变形、缺料等现象							/
reliability:								判定
performance test	Detection performance without broken lines, performance without bias, etc							OK
Salt Spray Test	After the test, there is no color difference on the surface, no ink falling off, no deformation, oxidation, etc							OK
附着力测试	测试面积油墨脱落小于等于5%							/
Good quantity:		defect description: /						
number of defectives : 0								
packing inspection	OK							
其它	/							
说明：对需检测的产品如在此中有不需要的检测项目用“/”表示								

一式两联

第一联客户

第二联存档

Inspector: 戴巧玲 Data: 23.10.08 Check:

[illegible]

[illegible]

CPK Report

Part Number(料号)	329900000107	Vendor(供应商)	尚远
Description(零件名称)	FT01-BRACKET-ANT-3-5	Inspected(确认者)	林长青
Tool Number(模号)	/	Inches/MM(英寸/毫米)	MM
Cavity(穴号)	/	Material Name(材质名称)	FPC
		Material Code(材质牌号)	FPC
Revision(版本)	V1.0	Date(日期)	2023.9.27

Dim. Designator(尺寸序号)	1	2	3	4	5	6	7	8							
Nominal(公称尺寸)	105.25	58.19	98.5	97	95	91.5	83	98.5							
+ Tolerance(正公差)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10							
- Tolerance(负公差)	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10							
Upper Limit(规格上限)	105.35	58.29	98.60	97.10	95.10	91.60	83.10	98.60							
Lower Limit(规格下限)	105.15	58.09	98.40	96.90	94.90	91.40	82.90	98.40							
1	105.22	58.17	98.53	97.02	95.03	91.48	83.02	98.53							
2	105.27	58.22	98.50	97.03	95.02	91.52	83.03	98.52							
3	105.23	58.21	98.48	96.98	95.01	91.47	82.98	98.48							
4	105.26	58.22	98.47	96.99	94.98	91.53	82.97	98.49							
5	105.21	58.16	98.48	96.97	94.97	91.48	82.99	98.47							
6	105.28	58.22	98.49	96.98	94.98	91.49	82.97	98.48							
7	105.27	58.21	98.53	97.00	94.99	91.50	83.02	98.53							
8	105.26	58.20	98.52	97.01	95.00	91.52	83.03	98.52							
9	105.23	58.21	98.47	96.99	95.01	91.53	83.02	98.49							
10	105.26	58.22	98.47	96.97	94.98	91.48	83.01	98.47							
11	105.21	58.16	98.48	96.98	94.97	91.52	82.98	98.48							
12	105.28	58.22	98.49	97.00	94.98	91.47	82.97	98.53							
13	105.27	58.21	98.50	97.01	94.99	91.53	82.99	98.52							
14	105.26	58.20	98.52	97.00	95.00	91.48	82.98	98.53							
15	105.23	58.21	98.47	97.01	94.98	91.49	83.01	98.52							
16	105.26	58.20	98.53	96.99	94.99	91.50	82.98	98.49							
17	105.21	58.21	98.52	96.97	95.00	91.52	82.97	98.47							
18	105.28	58.22	98.47	96.98	95.01	91.53	82.99	98.48							
19	105.27	58.16	98.47	97.00	94.98	91.48	82.97	98.49							
20	105.26	58.22	98.48	97.01	94.97	91.52	82.99	98.47							
MAX.	105.28	58.22	98.53	97.03	95.03	91.53	83.03	98.53							
MIN.	105.21	58.16	98.47	96.97	94.97	91.47	82.97	98.47							
AVERAGE	105.25	58.20	98.49	96.99	94.99	91.50	82.99	98.50							
STDEV	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02							
CP	1.34	1.53	1.43	1.93	1.92	1.49	1.54	1.40							
Cpk	1.33	1.34	1.34	1.82	1.77	1.46	1.44	1.38							
TOOLING(测量工具)	二次元	二次元	二次元	二次元	二次元	二次元	二次元	二次元							

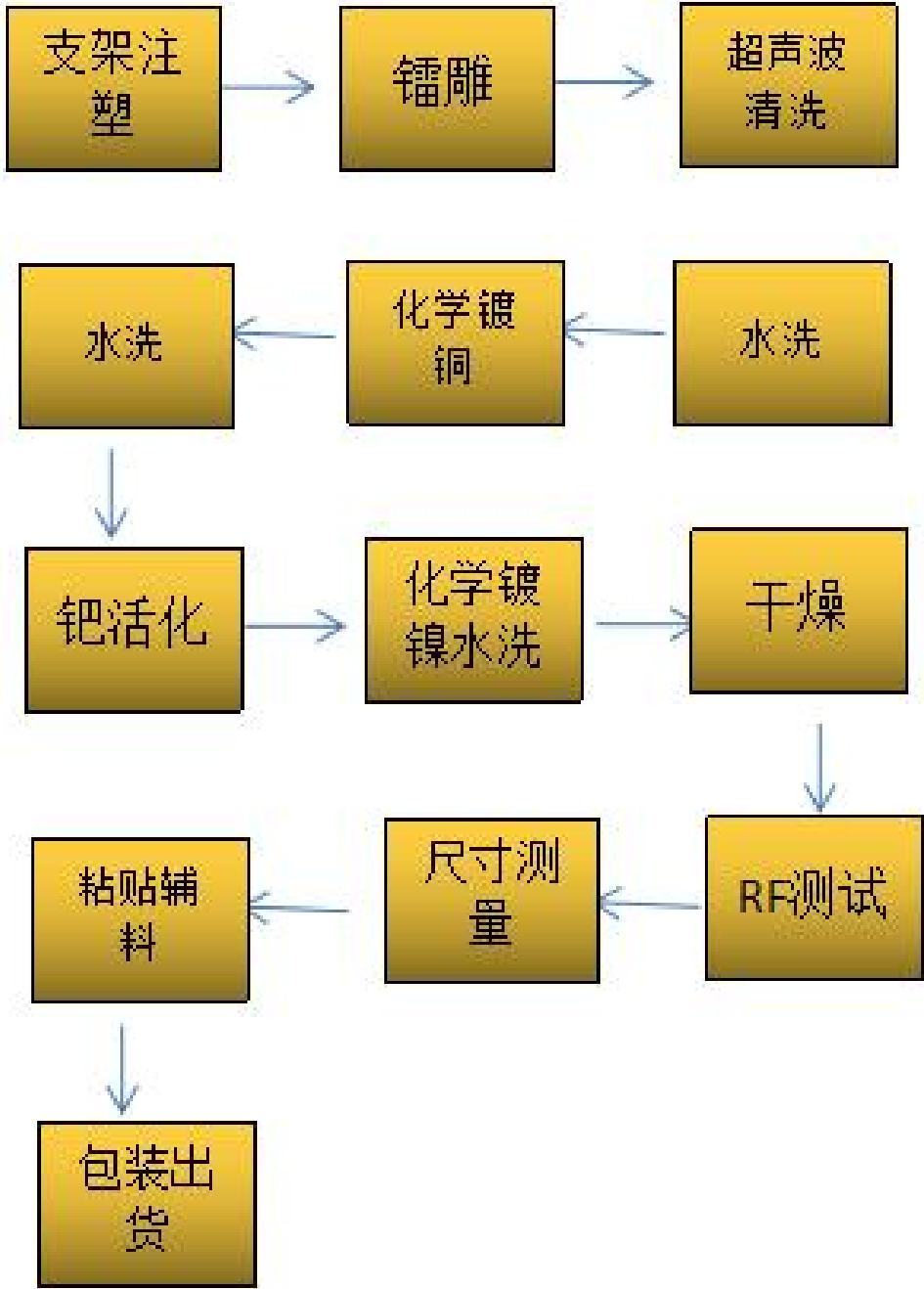
制表：戴巧玲

审核：陈小平

日期:2023.9.28

Process Flow Chart(制造流程图)

Customer(客户)	广翼	Written By(制作)	张远方	Orig. Date(制作日期)	2023.9.27
Part Number(料号)	329900000107	Revised By(校订)	于姜	Revised Date(校订日期)	2023.9.27
Description(零件名称)	FT01-BRACKET-ANT-3-5	Approved By(确认)	曹进茂	Approved Date(确认日期)	2023.9.27



QC engineering drawing

Customer(客户)		广翼			Written By(制作)		张远芳		Orig. Date(制作日期)		2023.9.27					
Part Number(料号)		329900000107			Revised By(校订)		于姜		Revised Date(校订日期)		2023.9.27					
Description(零件名称)		FT01-BRACKET-ANT-3-5			Approved By(确认)		曹进茂		Approved Date(确认日期)		2023.9.27					
序号	流程图	工序名称	重要度	制程说明	生产设备	检验特性	检验项目	操作	品质管制方法				检验标准(重点)	异常处理	相关文件	备注
									工具	数量	巡检人	巡检次数				
1		来料检查		按《IQC检验指导书》对来料进行检验	目视/卡尺	抽检	尺寸、外观、功能	IQC	目视/卡尺/投影仪/环境测试仪/盐雾测试机/恒温测试机	按AQL抽样 MAJ:0.4 MIN:1.0	IQC	每批/次	目视来料的支架有无缺胶、多胶; FPC有无色差、脏污、划伤、压印、漏铜等。尺寸按图纸要求检验; 相关的性能测试按《IQC检验指导书》所规定进行	退货、挑选或加工使用	《IQC检验指导书》、《支架类来料检验规范》、《FPC类来料检验规范》	加工选用类返工产品必须出返工方案, 重新挑选再送检, 直至合格为止
2		首件检验		按《IPQC检验指导书》对首件产品进行检验	目视/卡尺	抽检	尺寸、外观、功能、实配	生产组长	目视/卡尺/投影仪/环境测试仪/盐雾测试机/恒温测试机	外观:50PCS 尺寸:5PCS	IPQC	每批/次	按《成品检验标准书》进行检查, 相关的性能测试按《IPQC检验指导书》进行, 首件所做可靠性测试为留样分析用(5PCS)	重新生产送检	《IPQC检验指导书》、《成品检验标准书》	首件确认合格后产线/IPQC各留1PCS样品, 方可正式生产
3		外观检查		将贴好的的成品进行外观检查	目视	全检	外观	产线员工	目视	IPQC随机抽样 20PCS-30PCS	IPQC	1H/次	目视贴好的FPC有无脏污, 断裂, 漏焊等现象, 支架有无缺胶, 多胶, 批锋等不良现象。	返工或挑选	《支架类成品检验规范》、《FPC类成品检验规范》	注意佩带手套, 用专用工具辅助粘贴。
4		RF测试		将外观\尺寸合格后的成品按作业指导书作RF性能测试	网络分析仪	全检	电性能	RF测试员	网络分析仪	RF测试员全检	IPQC	每批/次	电性能是否达到规定要求	报射频测试或评审	《RF测试作业指导书》	测试时注意调整正确的程序
5		包装		按《包装作业指导书》对检验合格的成品进行检验	手工	全检	数量/标识/材料/配件	包装员	包装材料/胶带/封胶机	IPQC随机抽样	IPQC	每批/次	包装材料有无用错无短装、漏配件、标识无误	重新包装或补数量	《产品包装作业指导书》	包装时注意包装材料有无脏污
6		入库		规定摆放、标识	手工	全检	包装、数量	物料员	手套	IPQC随机抽样	IPQC	每批/次	包装及数量标识明确	重新包装或补数量	《仓库管理程序》	标识清楚产品名称及数量
7		出货检查		按《OQC检验指导书》对成品进行检验	目视/卡尺	抽检	外观/尺寸/功能等	OQC	目视/卡尺/投影仪/环境测试仪/盐雾测试机/恒温测试机	按AQL抽样 MAJ:0.25 MIN:1.0	OQC	每批/次	目视贴好的FPC有无脏污等现象, 支架有无缺胶、多胶等不良; 尺寸按图纸要求检验; 相关的性能测试按《OQC检验指导书》所规定进行	返工或挑选	《OQC检验指导书》、《支架类成品检验规范》、《FPC类成品检验规范》	抽检时注意有无短装, 选用或返工产品必须出返工方案, 重新挑选再送检, 直至合格为止
8		出货		包装数量	目视	全检	标识/包装	仓管员	目视	按AQL抽样 MAJ:0.25 MIN:1.0	OQC	每批/次	标识/包装/数量/产品规格/产品名称等是否与出货通知单相对应	开箱检查或重新包装	《出货管理程序》	注意出货产品客户是否有特殊要求如: 需附出货检验报告等

Reliability test report					
Customer(客户)	广翼	Written By(制作)	张远方	Orig. Date(制作日期)	2023.9.27
Part Number(料号)	329900000107	Revised By(校订)	于姜	Revised Date(校订日期)	2023.9.27
Description1(零件名称)	FT01-BRACKET-ANT-3-5	Approved By(确认)	曹进茂	Approved Date(确认日期)	2023.9.27

内置天线环境测试报告

客户名称 广翼 项目名称: FT01 产品名称: 天线成品 尚远料号: SH231711B89-2

样品数量: 每项5PCS 测试时间: 2023.9.27

测试时间	测试项目	测试条件和需求	测试设备	测试结果					
23.9.24 - 23.9.25	低温存储	在温箱中（-40℃）保存24个小时，在常温常湿（20℃，50%RH）下放2小时恢复干燥后测试，电性能（VSWR）和结构外形良好	标准温湿度箱	RF 外观	1	2	3	4	5
					-40℃	-40℃	-40℃	-40℃	-40℃
					OK	OK	OK	OK	OK
23.9.24 - 23.9.25	高温存储	在温箱中（65℃）保存24个小时，在常温常湿（20℃，50%RH）下放2小时恢复干燥后测试，电性能（VSWR）和结构外形良好	标准温湿度箱	RF 外观	1	2	3	4	5
					+70℃	+70℃	+70℃	+70℃	+70℃
					OK	OK	OK	OK	OK
23.9.24 - 23.9.26	恒温恒湿试验	温度为65℃，湿度为90%-95%RH，48H后，要求结构无破损，电性能无变化。	标准温湿度箱	RF 外观	1	2	3	4	5
					25℃~55℃/95%RH	25℃~55℃/95%RH	25℃~55℃/95%RH	25℃~55℃/95%RH	25℃~55℃/95%RH
					OK	OK	OK	OK	OK
23.9.24 - 23.9.26	冷热冲击测试	高温65℃、低温-35℃各1H，32个循环，要求结构无破损，电性能无变化。	标准温湿度箱	RF 外观	1	2	3	4	5
					-40℃~+70℃	-40℃~+70℃	-40℃~+70℃	-40℃~+70℃	-40℃~+70℃
					OK	OK	OK	OK	OK
23.9.24 - 23.9.26	耐盐雾实验	盐雾浓度为5%的NaCl溶液，在35℃条件下，对天线连续喷雾48小时，然后移出清洗之后进行16小时晾干。天线表面应无锈蚀、变色、及镀层剥落。	盐雾机	RF 外观	1	2	3	4	5
					35℃/5%	35℃/5%	35℃/5%	35℃/5%	35℃/5%
					OK	OK	OK	OK	OK

审核: 于姜

确认: 黄工

测试: 刘飞

RoHS 2.0 Restricted Substance composition questionnaire

SALEABLE PART	
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零件料号	零件名称/型号	供应商料号	制造商名称	供应商绿色物料标识方法
SH231711B89-2	FT01-BRACKET-ANT-3-5	329900000107	尚远	ROHS标识标签

SUB-PART	
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[illegible]

制表：戴巧玲	审核：林长青	制表日期：2023.9.27
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制表：戴巧玲	审核：林长青	制表日期：2023.9.27
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制表：戴巧玲	审核：林长青	制表日期：2023.9.27
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Bill Of Material

■ ROHS2.0（ROSH新指令2011/65/EU）

序号	零件料号	零件名称	零件描述	供应商名称	供应商型号	数量	是/否 ROSH 物料	备注 Remark
1	SH23171IB89-2	FT01-BRACKET- ANT-3-5	LDS	尚远	329900000107	1	是	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

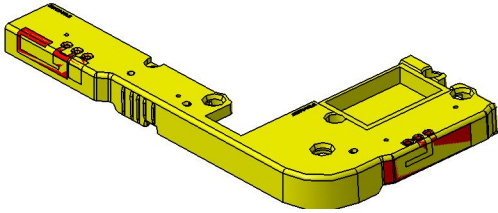
制表：张远方

审核：于姜

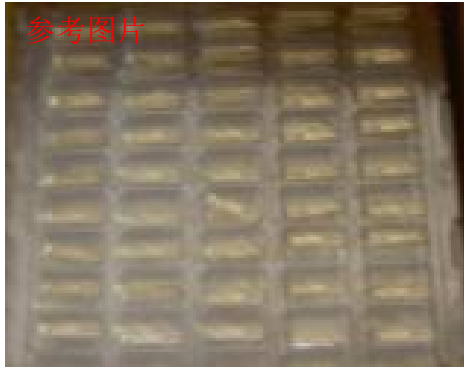
制表日期：2023.9.27

Manner of packing

1. 单个产品包装照片或2D图(针对单体有包装的物) 2. 单层产品包装照片或2D图(整齐性和可靠性体现)



参考图片



产品名称

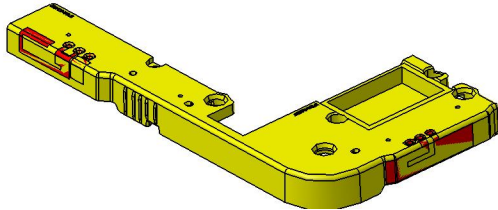
FT01-BRACKET-ANT-3-5

产品料号

329900000107

物料描述

3. 箱内所有层产品放置的照片(密封性、可靠性体现)



参考图片



4. 整箱封箱后的整体照片或2D图(整体封箱状态)

包装方式
描述或者包装物料描述

托盘+纸箱

箱内
包装
数量

每层或每包
的数量

层数或包数

每箱的数量

备注

5. 单包产品标签 (料号、产品名称、数量等信息)

6. 外箱标签 (料号、产品名称、数量等信息)

客户名称: 上海广翼智联科技有限公司

产品名称: FT01

订单号码: -

尚远科技编码: SH231711B89-2

客户物料编码:

数量: 4

供应商 上海尚远通讯科技有限公

检验员: 4

(盖章) 4

发货日期: 年 月 日 4

注意事项: 防潮、防震、防压, 小心轻放..... 4

客户名称: 上海广翼智联科技有限公司

产品名称: FT01

订单号码: -

尚远科技编码: SH231711B89-2

客户物料编码:

数量: 4

供应商: 上海尚远通讯科技有限公

检验员: 4

(盖章) 4

发货日期: 年 月 日 4

注意事项: 防潮、防震、防压, 小心轻放..... 4

1. 準備所需包材放於有利工作之位置. 2. 按照SYC-BZ01包裝規範, 用紙箱(SYC-01), 封口袋(PE)包裝, 1000PCS/包 3. 每箱以实际包装为准

供应商
签字

杜宪敏

日期

2023.9.27

MI test report					
客户		机种	FT01-BRACKET-ANT-0-1 FT01-BRACKET-ANT-3-5 FT01-BRACKET-ANT-2-6 FT01-BRACKET-ANT-4	料号	SH231711B89-1/SH231711B89-2 /SH231711B89-3 /SH231711B89-4
测试日期	2023. 09. 25	材质	DX11355	色号	BKNAT
原料批号				MI标准值	MVR: 9-18CC/10min
测试条件			MI测试数据	17CC/10min	判定结果
烘料温度	110° C				OK
烘料时间	4H				
设定温度	300℃				
砝码荷重	1. 2kg				
剪取时间	30秒				

Certificate of Analysis

Certificate Type:

Insp. certificate "3.1" EN

10204

Date printed: JUL/06/2022

**Shipped from details:**

SHPP (Shanghai) Co. Ltd
Shanghai Site
3F NO 58 AIDU ROAD
200131
SHANGHAI
China

Material Number 22029223
Material Description DX11355-BKNAT-BAG-00-00-00
Material Group LNP™ THERMOCOMP™ compound
Batch Number 1003095409
Manufacturing Plant Shanghai
Manufacturing Date JUL/02/2022

Characteristic	Unit	Value	Lower Limit	Upper Limit	Inspection method
MVR 300°C @1.2KG	CC/10'	16.9	9.0	18.0	ASTM D1238
<i>IZOD IMPACT NOTCH 23°C, 3.2MM</i>	<i>J/m</i>	<i>792.6</i>	-	-	<i>ASTM D256</i>
<i>SPECIFIC GRAVITY</i>	<i>g/cm3</i>	<i>1.277</i>	-	-	<i>ASTM D792</i>
<i>TENSILE STRENGTH, 3.2MM</i>	<i>MPa</i>	<i>58</i>	-	-	<i>ASTM D638</i>
<i>TENSILE ELONGATION, 3.2MM</i>	<i>%</i>	<i>109</i>	-	-	<i>ASTM D638</i>

The results in bold/italics are audit tests, latest done on 03/21/2022.

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Certificate of Analysis

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