

Disrupter Project antenna material requirements specification

Customer name: Guoheng Intelligent Technology (Huizhou) Co., LTD

Customer product name: Disrupter

Product name: left headphone antenna

Product specification: injection molding bracket + LDS antenna-L edge

Material code: 119-DSRP007A2

Supplier model: 336021-1A (L) left headphone antenna

Change Content CV:

order number	edition	state	availability date	person liable	page number	remarks
1	R:A	editio princeps	2023-02-28	Yuan Shujun	14	

The Supplier acknowledges the signature that:

Responsible person / date		IQC / Date-	Review / Date	Approval / Date
MD	Feng Jiwu	Zhong Qihong	Zeng Xiang good	
RF	Chen Kehong			

The Demander acknowledges the signature (please send it back after the confirmation):

The demander the result: ☐ qualified ☐ unqualified			
Development & Design Engineer / Date	SQE Engineer / Date	Purchasing Leader / Date	Development Manager approval / date

catalogue

1. OVERVIEW	3
1.1 SCOPE OF APPLICATION	3
1.2 PROJECT BASIC INFORMATION	3
2. TECHNICAL INDEX REQUIREMENTS	3
2.1 INTRODUCTION OF TEST ITEMS AND EQUIPMENT	3
2.2 ACTIVE REPORTING	3
2.2.1 TEST INSTRUCTIONS	3
2.2.2, ELECTRICAL PERFORMANCE PARAMETERS	4
2.2.3 ANTENNA PASSIVE PARAMETERS	5
2.2.4 ANTENNA PASSIVE PARAMETER-FREE SPACE	5
2.2.5 ANTENNA PASSIVE PARAMETERS-HEAD / EAR	6
2.2.6 MAIN BOARD CONDUCTION	6
2.3 ACTIVE PARAMETERS OF THE ANTENNA	7
2.4 ANTENNA MATCHING	8
2.5 THE ANTENNA TEST ENVIRONMENT	8
2.6 ANTENNA DIRECTION DIAGRAM	9
2.7 FIELD MEASUREMENT DATA	10
3. STRUCTURAL DRAWINGS	11
3.1 DRAWING OF THE LEFT HEADSET ANTENNA	11
4. BILL OF MATERIALS	12
5. FULL-SIZE REPORT	13
5.1 LEFT HEADPHONE SIZE REPORT	13
6 PACKAGING SPECIFICATION (PACKAGING DIAGRAM)	14

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for Disrupter products.

This requirement applies to the selection, testing and acceptance of Disrupter antennas.

1.2 Project basic information

Antenna name:	Disrupter
Antenna frequency:	BT : 2400-2500MHZ
Antenna material:	LDS antenna
Antenna version:	R:A

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
Active test	TRP,TIS	Integrated tester, microwave darkroom

2.2 Active Reporting

2.2.1 Test instructions

Test tools: Agilent8960 instrument, R & S CMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

Test environment: temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

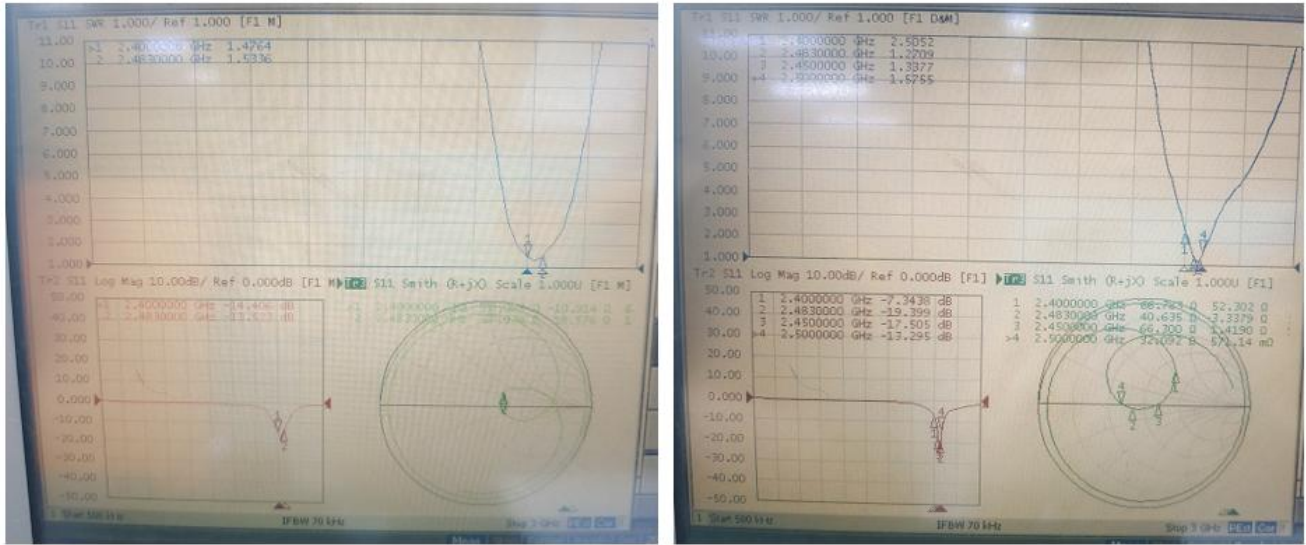
Test method: DUT is fixed in the center of the turntable on the same horizontal line as the center of the horn antenna.

The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument and turntable controller communicate with the PC with automatic test software through the GPIB interface.

2.2.2, electrical performance parameters

Product electrical performance index	
Operating frequency range	2400MHz-2500MHz:
standing-wave ratio	2400MHz-2500MHz: < 2.0
antenna gain	.02400MHz-2500MHz: - 2 dBi ± 1dBi
radiation efficiency	2400MHz-2500MHz: > 20 %
impedance	50 ohm
Product material description	
LDS	Sabic
Product environment description	
working temperature	- 40℃ ~ + 80 °C
Storage temperature	- 40℃ ~ + 80 °C

2.2.3 Antenna passive parameters



2.2.4 Antenna passive parameter-free space

Test	L								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (%)	23.2%	24.2%	24.6%	25.7%	27.1%	26.2%	25.8%	25.1%	24.1%
efficiency(dB)	-6.35	-6.16	-6.09	-5.90	-5.67	-5.82	-5.88	-6.00	-6.18
transmission gain (dBi)	-0.76	-0.68	-0.59	-0.42	-0.31	-0.58	-0.73	-0.82	-0.91

2.2.5 Antenna passive parameters-Head / ear

Test	L								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq. (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480
Efficiency (%)	8.2%	8.3%	8.6%	9.0%	9.1%	8.9%	8.6%	8.0%	7.9%
efficiency(dB)	-10.88	-10.79	-10.63	-10.47	-10.43	-10.51	-10.65	-10.98	-11.05
transmission gain (dBi)	-4.64	-4.48	-4.24	-3.68	-3.39	-3.49	-3.41	-4.00	-4.15

2.2.6 Main board conduction

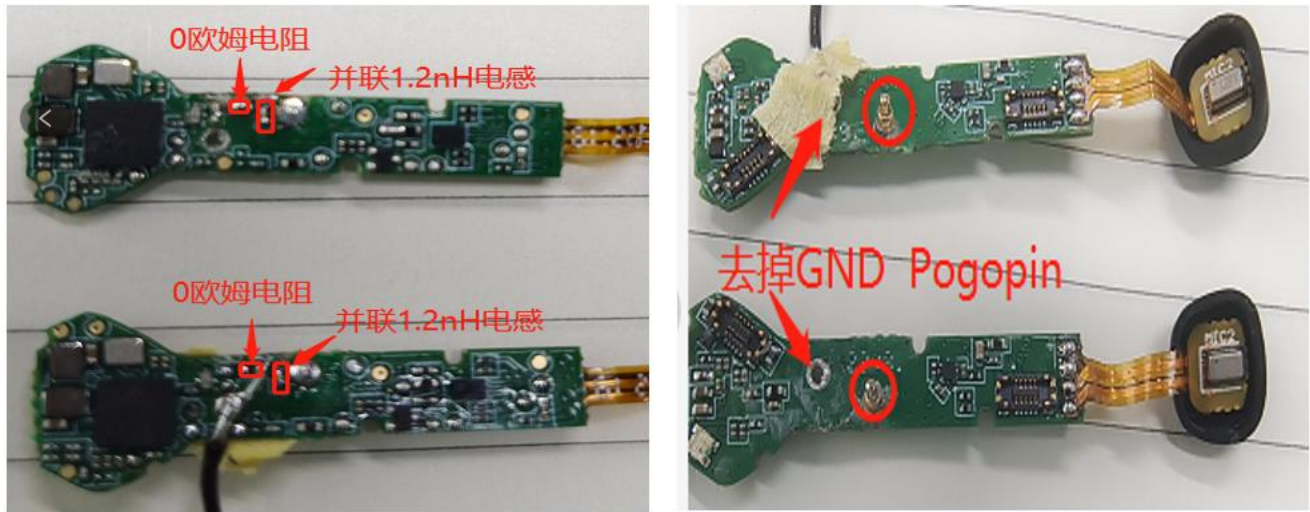
Test	L		
channel	0	39	78
power (dBm)	11.5	11.4	11.2
sensitivity (dBm)	-93	-93	-93

2.3 Active parameters of the antenna

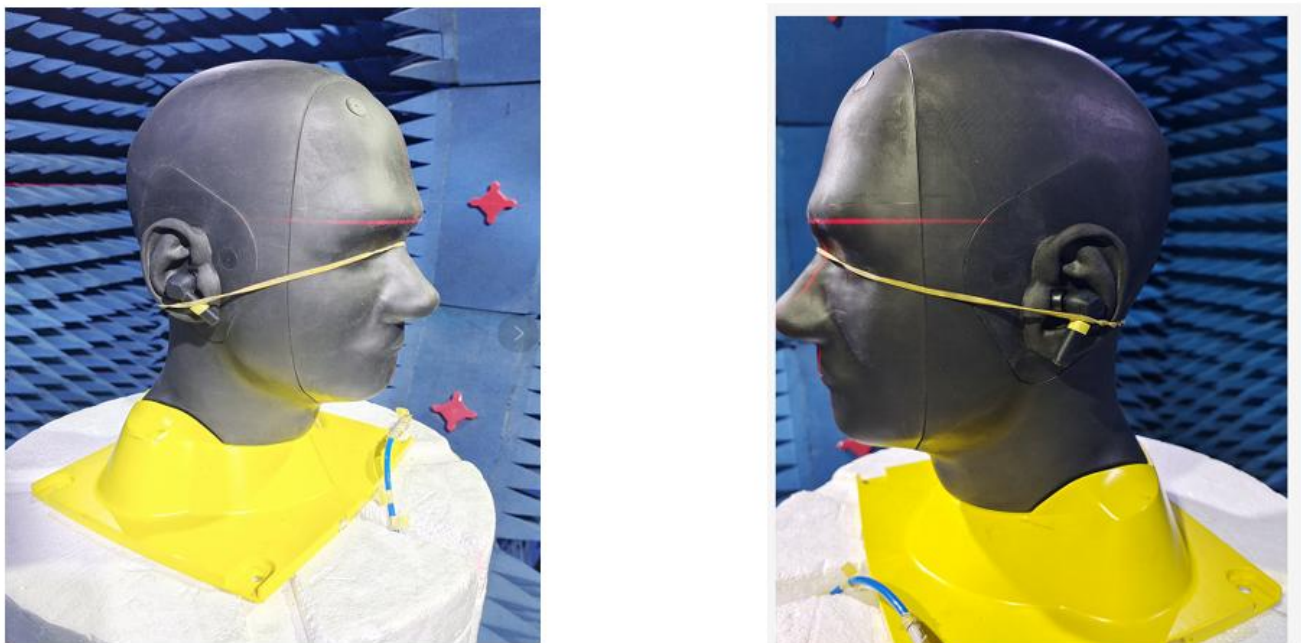
Free- space	L		
CHANNEL	0	39	78
TRP (dBm)	5.51	5.61	5.09
TIS (dBm)	-88.48	-88.62	-88.55

Head/ear	L		
CHANNEL	0	39	78
TRP (dBm)	1.14	1.25	1.09
TIS (dBm)	-82.14	-82.35	-82.18

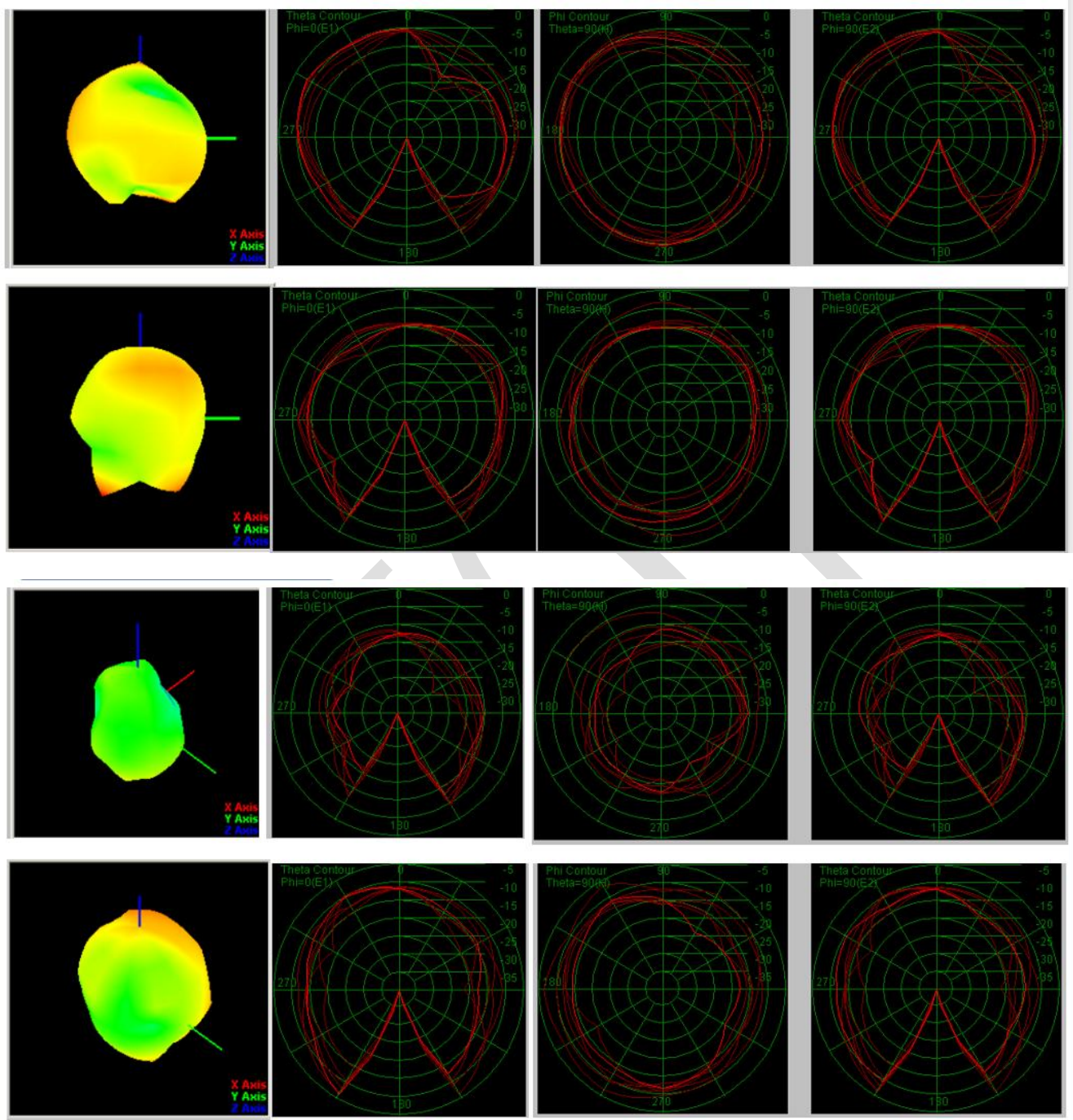
2.4 Antenna matching



2.5 The antenna test environment



2.6 Antenna direction diagram



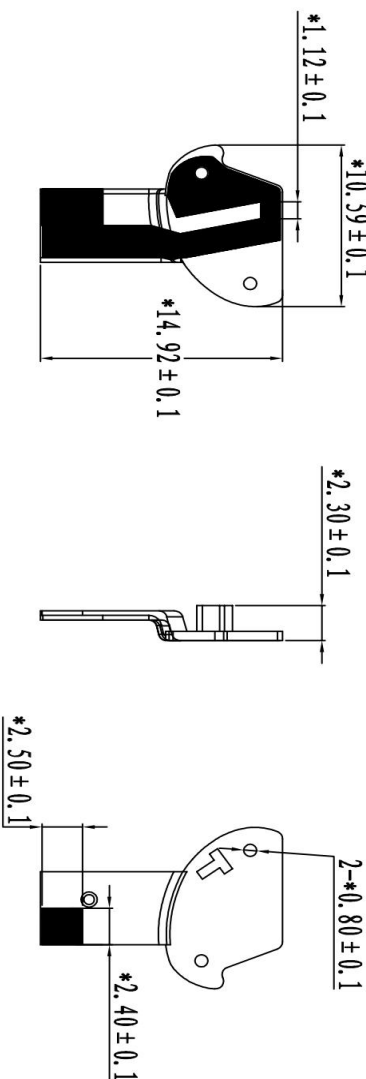
2.7 Field measurement data



Test method:	1. Distance test: the mobile phone is connected to the Bluetooth headset, and the mobile phone is placed on the non-metallic bracket with a height of 60cm. The tester wears the headset and walks far away, while the tester rotates 360 degrees. The limit distance between the call sound and the music sound in the headset without breaking is measured.	
	2. Close-in test: Testers carry mobile phones with them (preferably in the back pocket of pants with the main ear of the bluetooth headset opposite) for human rotation test.	
	3. Hands covering test: testers wear headphones and connect them with mobile phones to play music, and test in two states: 1) fingertip up test to test whether the music is broken; 2) Fingertip back test to test whether the music is broken.	
Test location:	In the outdoor space downstairs of our company (see test environment), the outdoor lawn downstairs of our company (see test environment), our engineering personnel.	
Test equipment:	Iphone 6。	
Test results:	Test item	Iphone 6
	Listen to music	1. When the left and right ears are each other's dominant ears, test 360 degrees within 13M without stuck break and squat without stuck
		2. There is no stuck phenomenon in close test.
		3, hands cover test: fingertip up test has broken; Fingertip back test is stuck.

3.structural drawings

3.1 Left headphone antenna drawing

由 Autodesk 教育版产品制作				A			
Skills requirement: 1.The dimensions marked with numbers are regarded as important dimensions, and the others refer to 2D drawings 2 MATERIAL: Black LDS PC DX11355-BKNAT (With 100% pure ingredients) 3 Parameter requirement: CU:8-12 UM Ni:2-4UM 4. Flatness of the finished product is less than or equal to 0.50; 5.Ds Antenna can not crack and fall off after electroless plating. Obvious scratch, overflow plating, such as lack of plating, bad phenomenon. 6. LDS antenna products require 100% test conduction. 7. Parts meet ROHS2.0/HF/Reach/GP environmental protection requirements							
1				2			
3				4			
5				6			
7				8			

Shenzhen Yu Sheng Communication Equipment Co., Ltd.

Model	G3	DATE	20230628
Name	RF-L-ANT	Design	JFB
Part NO	336021-1A	MD	JFB
Material quality	CU 8-12 um Ni 2-4um	RF	CKH
hold surface treatment		confirm	
Appearance treatment		UNIT	mm
position		proportion	1:1
		FIT	Revise
		R: A	

4. Bill Of Material

YUSHENG COMMUNICATION TECHNOLOGY CO.,LTD.

336021(G3)-BOM

Edition/版本: R/A

client/机种: 336

Model/项目: 336015

date/日期: 20220511

Item	Part No项次	Name名称	Types of 类型	version 版本	specification规格	Material quality材 质	colour颜色	surface treatment 表面处理	unit单位	Quantity数量
1	336021-1A	BT-L-ANT	Z	R/A	14.92*10.59*2.30mm				PCS	1
1.1	336021-1A-01	L-Trestle	W	R/A	14.92*10.59*2.30mm	SABIC DX11355	black	V#18	PCS	1
1.2	336021-1A-02	L-Pattern	W	R/A	Cu 8-12 NI 2-4	CU NI	Gray	Chemistry NI	PCS	1
2	336021-1B	BT-R-ANT	Z	R/A	14.92*10.59*2.30mm				PCS	1
2.1	336021-1B-01	R-Trestle	W	R/A	14.92*10.59*2.30mm	SABIC DX11355	black	V#18	PCS	1
2.2	336021-1B-02	R-Pattern	W	R/A	Cu 8-12 NI 2-4	CU NI	Gray	Chemistry NI	PCS	1

Confirmation:

Type: W. Outsourcing B. Semi-finished products Z. Finished products C. Customer supply

Review:

Production: FW

5. Full-size report

5.1 Left Headphone Size Report

LDS Product appearance and size report

Customer name: Guoheng P / N 336021-IA(L) project name G3 The date of detection : 2023-02-23

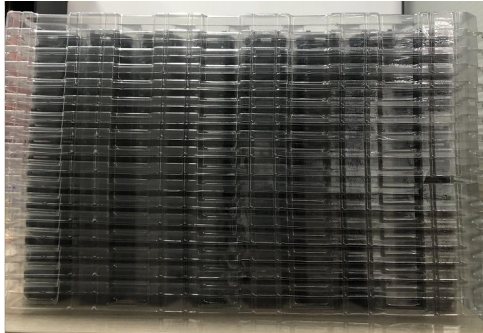
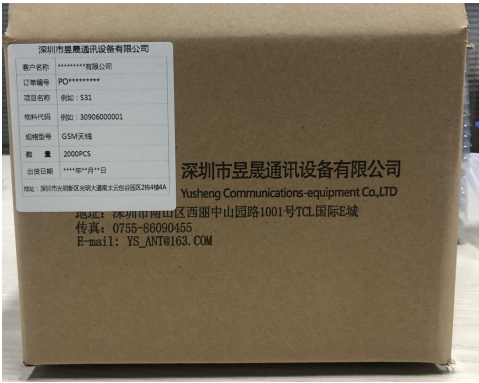
product type:: ☐stamping ☐plastic parts ☐assembly parts

NO	Item times	Sample:1	Sample:2	Sample:3	Sample:4	Sample:5	bear fruit	inspection tool	rem arks
1	10.59±0.10	10.62	10.63	10.65	10.63	10.64	OK	Secondary element projector	
2	1.12±0.10	1.11	1.12	1.15	1.13	1.15	OK	Secondary element projector	
3	14.92±0.10	14.95	14.96	14.93	14.92	14.95	OK	Secondary element projector	
4	2.30±0.10	2.32	2.31	2.35	2.32	2.32	OK	Secondary element projector	
5	0.80±0.10	0.78	0.77	0.78	0.77	0.76	OK	Secondary element projector	
6	2.40±0.10	2.45	2.43	2.42	2.43	2.43	OK	Secondary element projector	
7	2.50±0.10	2.52	2.52	2.53	2.53	2.51	OK	Secondary element projector	
performance testing	salt spray test	√	√	√	√	√	OK	Salt mist test machine	
	broken circuit	√	√	√	√	√	OK	universal electric meter	
	Bige test	√	√	√	√	√	OK	Beige glue, Beige knife	
	antenna performance	√	√	√	√	√	OK	Microwave dark room	
surface	product appearance	√	√	√	√	√	OK	microscope	
	Packaging identification	√	√	√	√	√	OK	visual	
	date							visual	
Control of harmful substances		√	√	√	√	√	OK	EDX	
Final judgment result		☐ Accept ☐ rejected ☐ heavy industry ☐ special production							
remarks	1. Performance, reliability, electrical, appearance inspection qualified, play "V".2. Test the measured data, and only record 5 groups. The samples taken during the size and functional part shall be subject to the different LOT No. of the shipment batch.3. Comprehensive output: initial 4N, dial 20								

Approval: Jiang Fangbai

Production: Lu Tingying

6 Packaging specification (packaging diagram)

1. Individual product packaging photo or 2D diagram	2. Picture or 2D picture of the minimum package in the box	Product material number	LDS antenna																	
		product name	LDS antenna																	
3. Label photos or 2D drawings on the rear surface of the whole box sealing box	4. Schematic diagram of the labels	Product version	T:A																	
		manner of packing	The whole disk packaging																	
		In-box packing	The plate	Depending on the project situation																
			Each box quantity	Depending on the project situation																
	深圳市昱晟通讯设备有限公司 <table><tr><td>客户名称</td><td>*****有限公司</td></tr><tr><td>订单编号</td><td>PQ*****</td></tr><tr><td>项目名称</td><td>李记: S31</td></tr><tr><td>物料代码</td><td>料号: 30906000001</td></tr><tr><td>规格型号</td><td>GSM天线</td></tr><tr><td>数量</td><td>2000PCS</td></tr><tr><td>出货日期</td><td>****年**月**日</td></tr><tr><td colspan="2">地址: 深圳市宝安区西乡街道大沙头社区西乡大道2164号4A</td></tr></table> 深圳市昱晟通讯设备有限公司 Yusheng Communications-equipment Co.,LTD 区西丽中山园路1001号TCL国际E城 传真: 0755-86090455 E-mail: YS_ANT@163.COM	客户名称	*****有限公司	订单编号	PQ*****	项目名称	李记: S31	物料代码	料号: 30906000001	规格型号	GSM天线	数量	2000PCS	出货日期	****年**月**日	地址: 深圳市宝安区西乡街道大沙头社区西乡大道2164号4A		remarks		
		客户名称	*****有限公司																	
		订单编号	PQ*****																	
		项目名称	李记: S31																	
物料代码	料号: 30906000001																			
规格型号	GSM天线																			
数量	2000PCS																			
出货日期	****年**月**日																			
地址: 深圳市宝安区西乡街道大沙头社区西乡大道2164号4A																				
Confirmconfirmation, Zhong Qiuhong																				
date	2022-1-5																			
Confirmati on of the person	Zhong Qiuhong																			