acknowledgement

product description:	Manufacturer:	Shenzhen Yusheng Communication Equipment Co., LTD	Project model: IDW 27
			Specifications / Colors:
	Material Name:	LDS bottom case	Date of signature:
			Note: (This cover requires supplier seal)
	Material Code:	R:a	
appendix:	version number:		

þ Electrical and mechanical performance description (specifications) ☐ manufacturing flow chart

þ QC engineering drawing þ sample

þ CPK Report the þ full-size measurement report

þ Reliability test report þ Packaging mode

þ List of raw materials / RoHS Report / HF / REACH

(Everything needs to be provided)

Supplier signature and draft: Li Jieyi audit: Xiao Jinbao

Approval: Feng Jiwu

(All of the above require manual signature, and printing is not allowed)

The above should be filled in by the supplier and the following by Aidu

	department	**Confirm content**				**Confirm the results**	**Valfirm person / date**
Technical confirmation field	Supplier quality	☐ RoHS material ☐ Non-RoHS materials	☐ Compliance with the REACH requirements	☐ Meet the halogen-free requirements	☐ Other environmental protection requirements		
	Design department ID:	☐ Customer request ID	☐ color confirmation	☐ Surface process validation	☐ Shell, hardware, key material		
	construction engineer	☐ 2D drawing file dimensional confirmation ☐ Specification and technical requirements	☐ Focus on controlling the dimension labeling ☐ electrical performance parameters	☐ adaptation validation ☐ function	☐ Shell, hardware, key material ☐ effect		
	hardware engineer	☐ 2D drawing file dimensional confirmation ☐ Specification and technical requirements	☐ Focus on controlling the dimension labeling ☐ electrical performance parameters	☐ adaptation validation ☐ function	☐ Shell, hardware, key material ☐ effect		
	Research and development quality:	☐ Test criteria confirm the ☐ appearance	☐ Normative dimension labeling (key ruler cun)	☐ reliability verification ☐ adaptation validation	☐ Function ☐ effect		

Final Confirmation of the Project Manager:	☐ Acknowledge the integrity of the documents ☐ Normalization of dimensions (key dimensions)	☐ Specification and technical requirements ☐ appearance	☐ Electrical performance parameters ☐ function ☐ effect

Conditions of recognition: ☐ formal recognition

☐ limited recognition

☐ disallow

Distribution department: ☐ IQC ☐ supplier ☐ customer ☐ after-sales ☐ SQE / text control

☐ other_____

QF -QMP -QA 01-01

Shenzhen Yusheng Communication Equipment Co., LTD

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catalogue

1. OVERVIEW **4**
1.1 SCOPE OF APPLICATION 4
2. TECHNICAL INDEX REQUIREMENTS **4**
2.1 INTRODUCTION OF TEST ITEMS AND EQUIPMENT 4
2.2 ACTIVE REPORTING 4
2.2.1 TEST INSTRUCTIONS 4
2.2.2 ANTENNA S11 PASSIVE PARAMETERS 5
2.2.3 PASSIVE ANTENNA PARAMETERS 6
2.2.4 ANTENNA DIRECTION DIAGRAM-GPS-FS 7
2.2.5 ANTENNA DIRECTION DIAGRAM-BT-FS 8
2.2.6 ANTENNA DIRECTION DIAGRAM-GPS-ARM 8
2.2.7 ANTENNA DIRECTION DIAGRAM-BT-ARM 9
2.2.8 PLUG-IN MEASURED SEARCH STAR-ARM 9
2.2.9 ANTENNA TEST ENVIRONMENT 10
3. ENGINEERING DRAWING FILE **11**
4. BILL OF MATERIALS **12**
5. RELIABILITY TEST REPORT **13**
8. PACKAGING INFORMATION **15**

1. Overview

1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for IDW27 products.

This requirement applies to the selection, testing and acceptance of IDW 27 antennas.

2. Technical index requirements

2.1 Introduction of test items and equipment

inventory	test item	equipment
S11 parameter	Standing wave ratio, echo loss	network analyzer
Active test	TRP,TIS	Integrated tester, microwave darkroom
Passive test	Gain, efficiency	network analyzer

2.2 Active Reporting

2.2.1 Test instructions

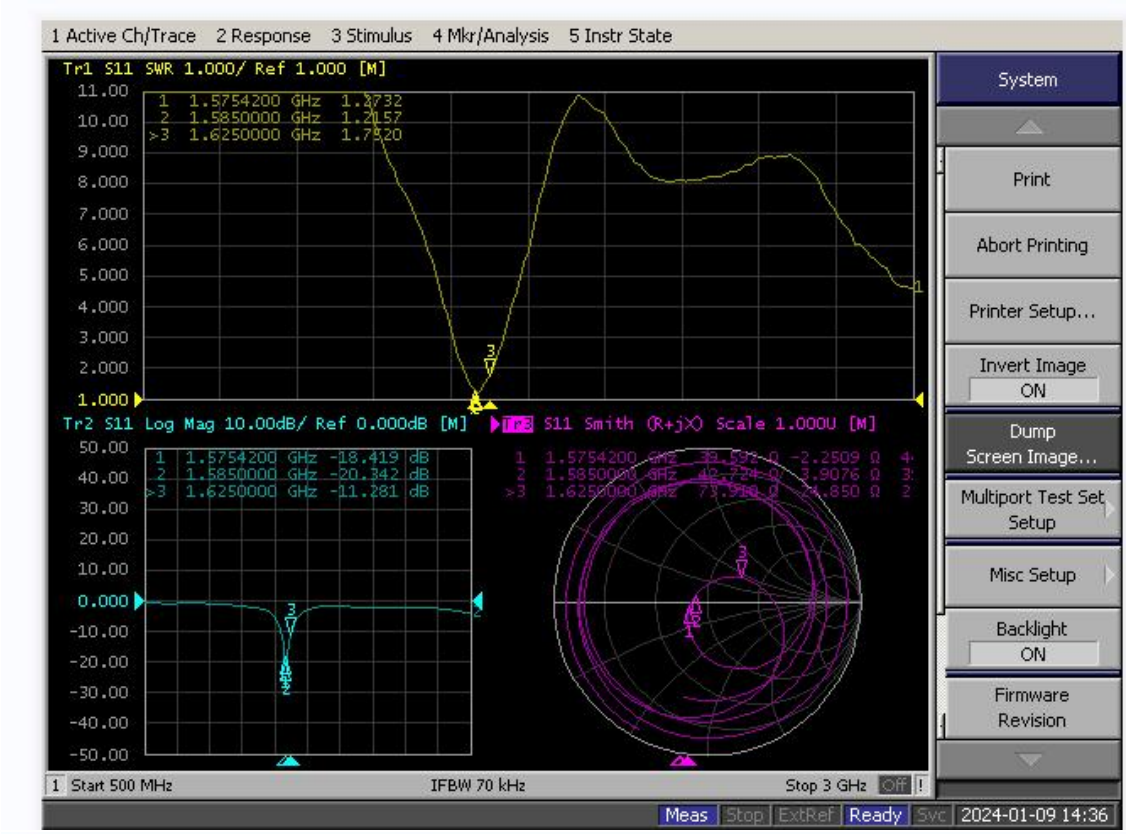
Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

Test environment: temperature 22℃± 3℃, humidity 50% ± 15%

Test method: DUT is fixed in the center of the turntable with H plane, 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 PC with automatic test software through GPIB interface.

2.2.2 Antenna S11 passive parameters



2.2.3 passive antenna parameters

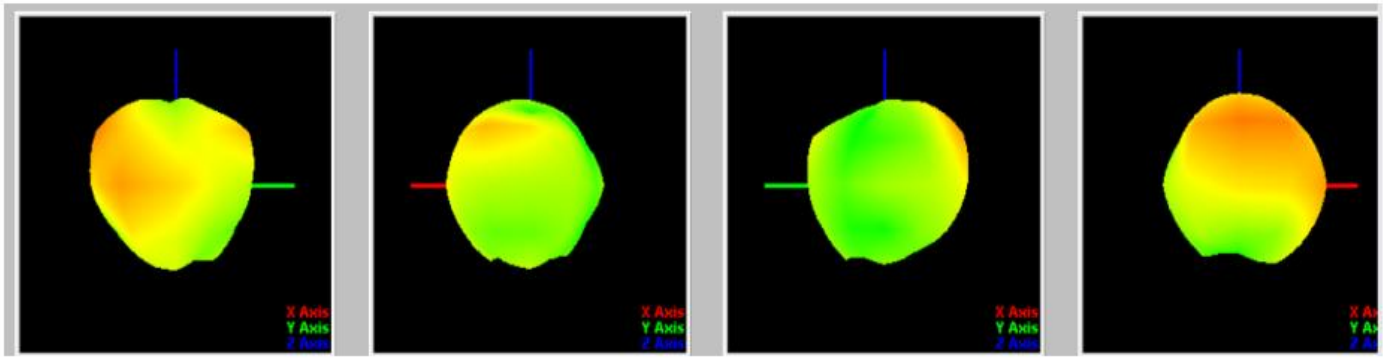
Test	Free-space								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq.(MHz)	**2400**	**2410**	**2420**	**2430**	**2440**	**2450**	**2460**	**2470**	**2480**
Efficiency (%)	21.3	22.1	25.5	26.7	27.2	25.2	24.7	23.4	22.4
productiveness (dB)	-6.7	-6.5	-5.9	-5.7	-5.6	-6.0	-6.1	-6.3	-6.5
gain (dBi)	-2.36	-2.14	-1.94	-1.73	-1.52	-1.73	-1.82	-1.91	-2.17

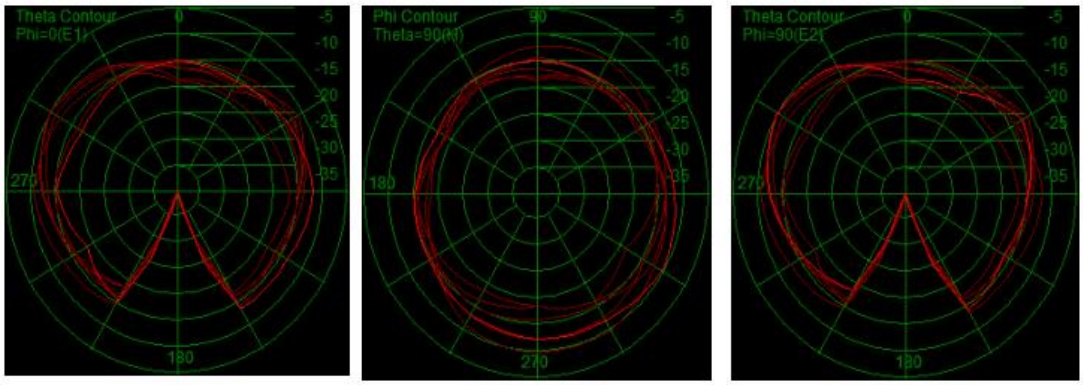
Test	ARM								
Test Point ID	1	2	3	4	5	6	7	8	9
Freq.(MHz)	**2400**	**2410**	**2420**	**2430**	**2440**	**2450**	**2460**	**2470**	**2480**
Efficiency (%)	7.6	8.2	9.1	9.4	10.1	9.6	8.7	8.5	8.1
productiveness (dB)	-11.2	-10.9	-10.4	-10.3	-10.1	-10.2	-10.6	-10.7	-10.9
gain (dBi)	-6.92	-6.63	-6.26	-5.94	-5.87	-6.27	-6.42	-6.69	-6.87

Test	Free-space							
Test Point ID	1	2	3	4	5	6	7	8
Freq.(MHz)	**1550**	**1555**	**1560**	**1565**	**1570**	**1575**	**1580**	**1585**
Efficiency (%)	16.7	17.5	18.5	20.4	21.7	20.4	19.7	19.4
productiveness (dB)	-7.7	-7.6	-7.3	-6.9	-6.6	-6.9	-7.1	-7.1
gain (dBi)	-3.59	-3.42	-3.27	-3.16	-3.09	-3.24	-3.41	-3.54

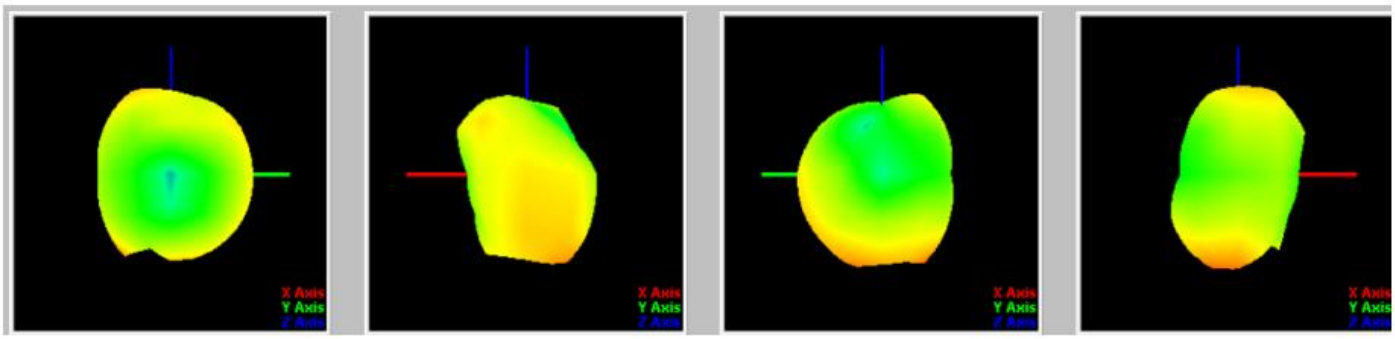
Test	ARM							
Test Point ID	1	2	3	4	5	6	7	8
Freq.(MHz)	1550	1555	1560	1565	1570	1575	1580	1585
Efficiency (%)	8.3	8.6	9.1	10.1	10.5	9.9	9.5	8.9
productiveness (dB)	-10.8	-10.6	-10.4	-10.1	-9.8	-10.1	-10.2	-10.5
gain (dBi)	-6.63	-6.47	-6.14	-5.59	-5.72	-6.12	-6.41	-6.71

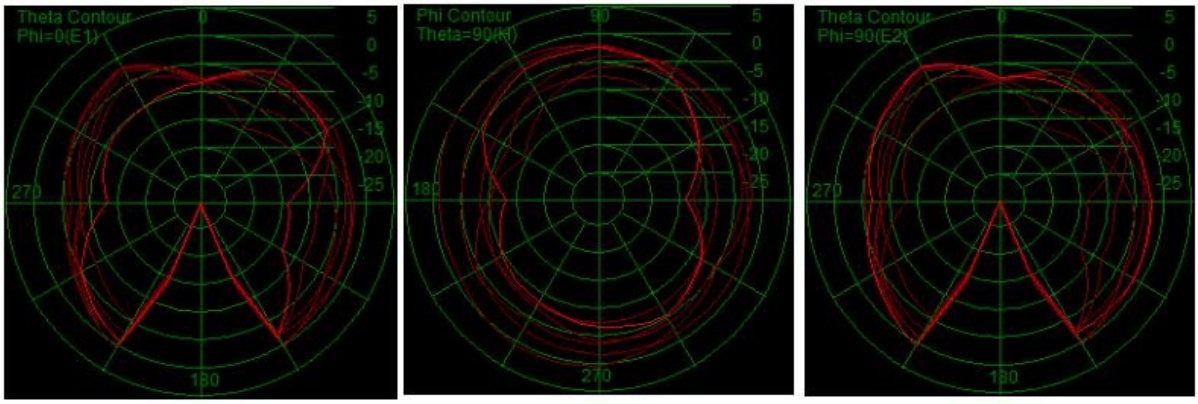
2.2.4 Antenna direction diagram-GPS-FS



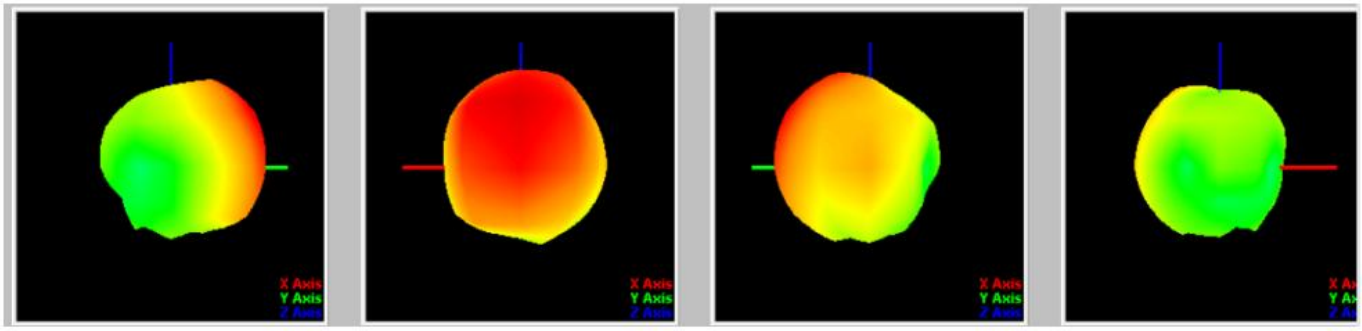


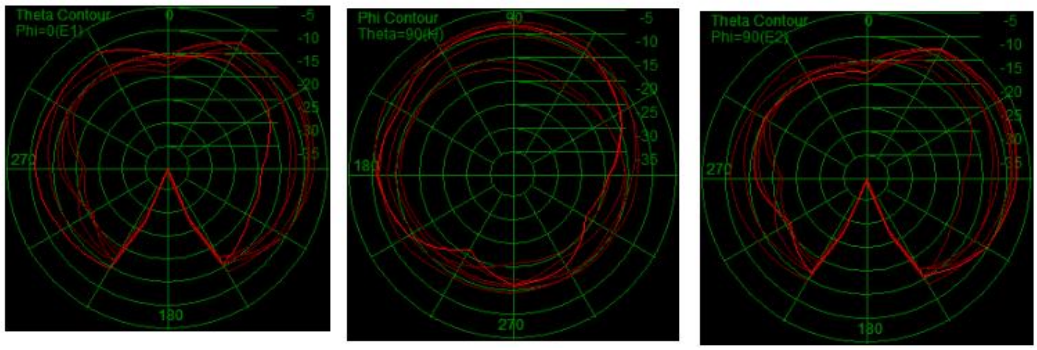
2.2.5 Antenna direction diagram-BT-FS



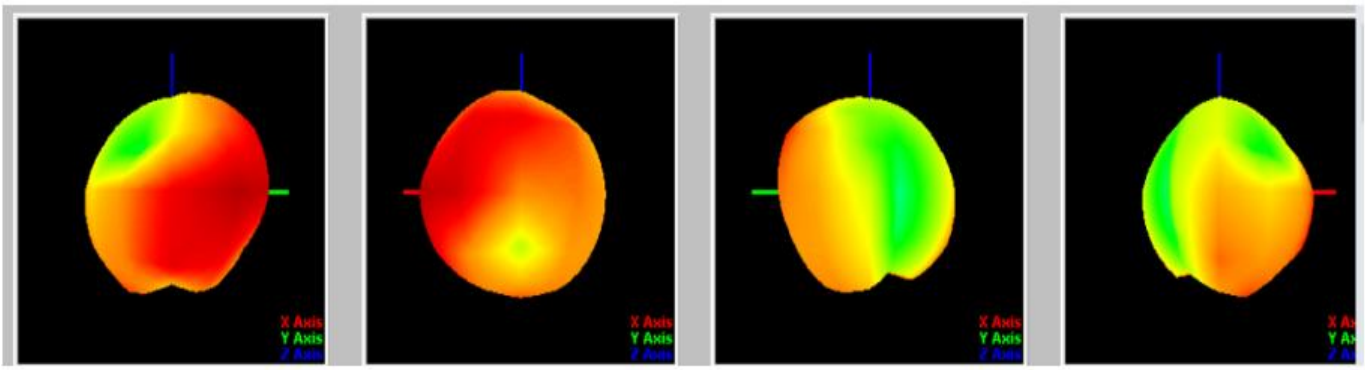


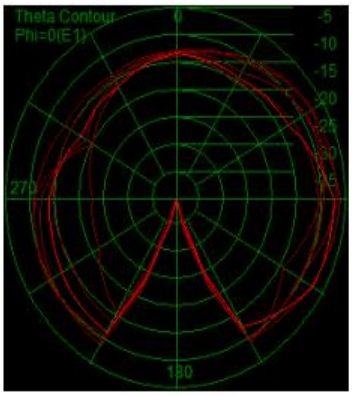
2.2.6 Antenna direction diagram-GPS-ARM

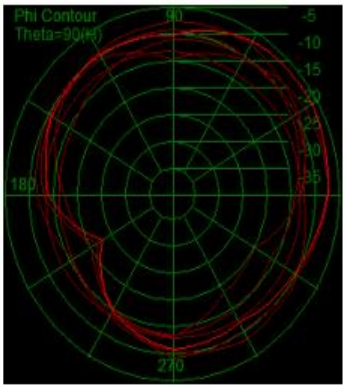


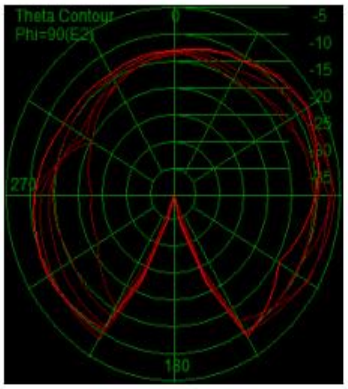


2.2.7 Antenna direction diagram-BT-ARM



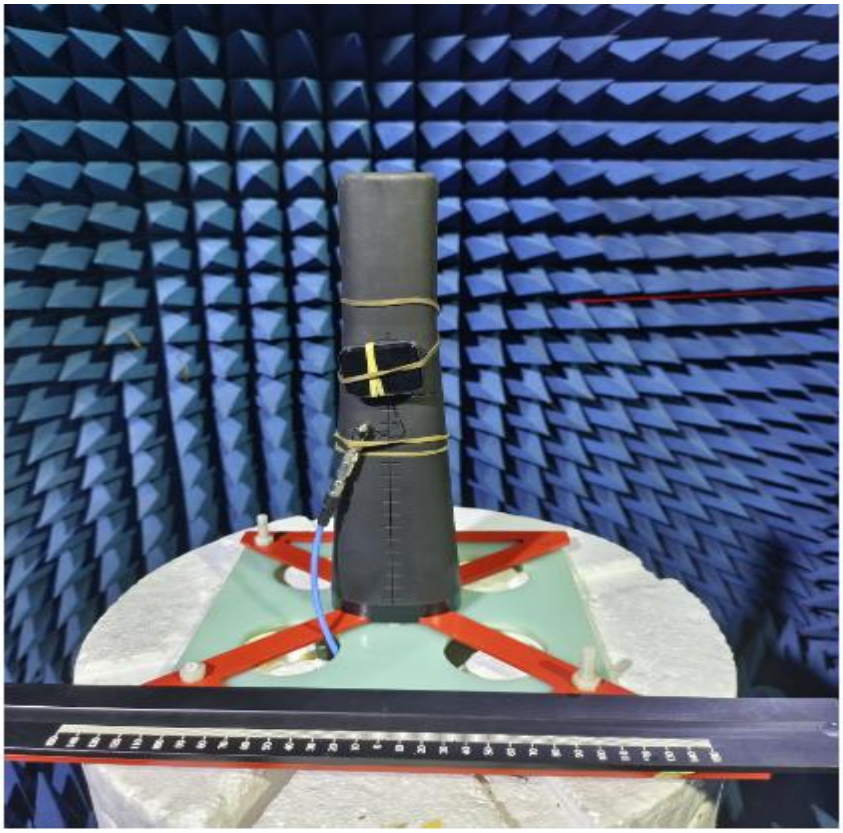




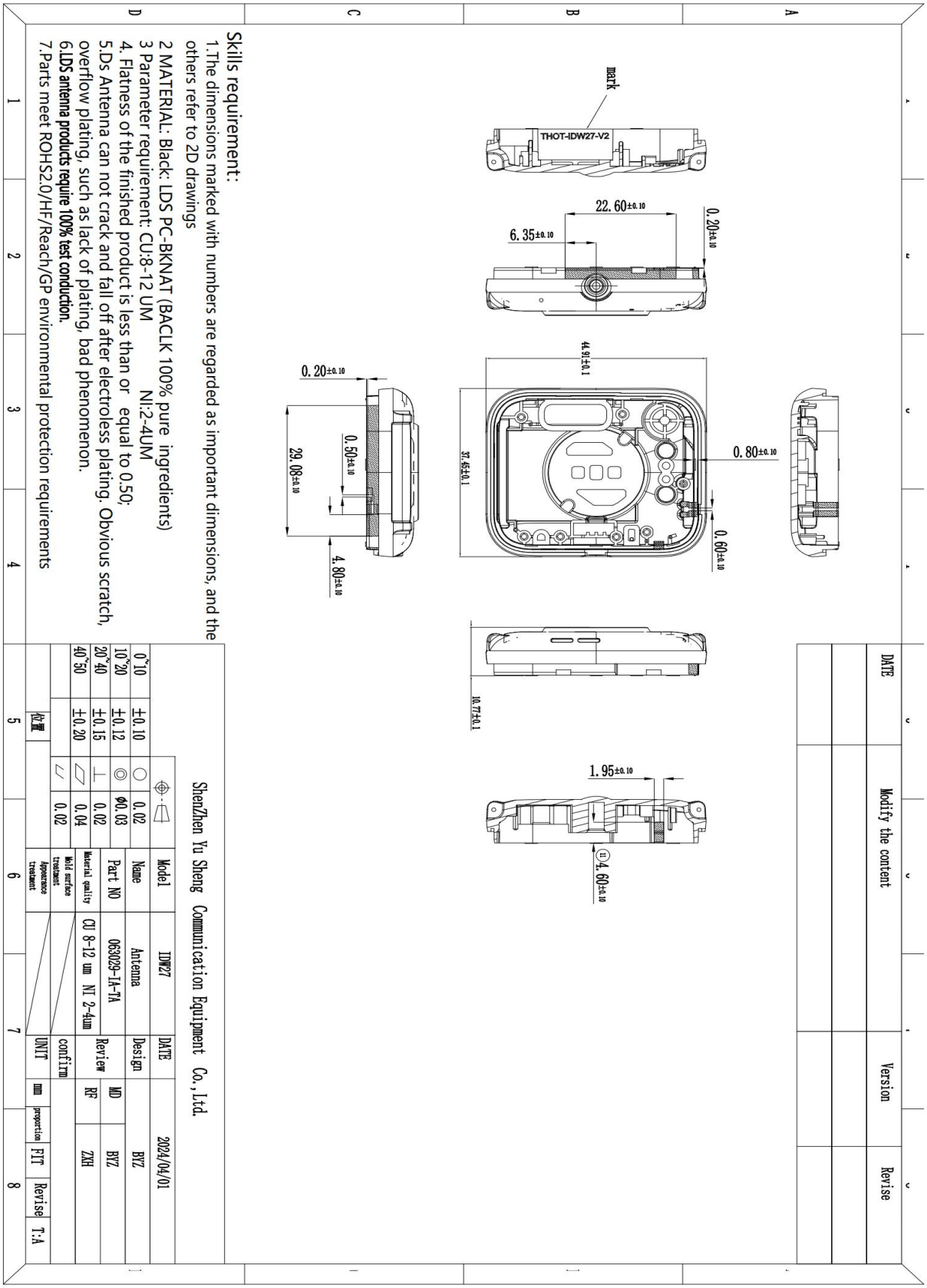


2.2.8 plug-in measured search star-ARM

2.2.9 Antenna test environment



3. Engineering drawing file



4. Bill Of Material

Shenzhen Yusheng Communication Equipment Co.,LTD

Shenzhen Yusheng Communication Equipment Co.,LTD

063029(IDW27)-BOM

Edition: T:A client:063 Model: 063029 date: 20240314

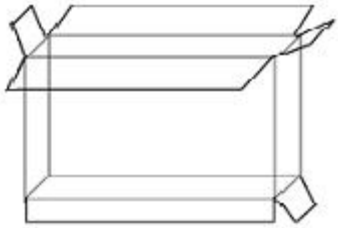
Item number	Material code	Name	Types of	Machine type	Specification and model	colour	Unit of measurement	dosage	remark
1	063029-IA-TA	LDS antenna assembly		IDW27	LDS technology	Black	PCS	1	
1.1	063029-IA-01-TA	Plastic shell		IDW27	Black fine grain LDS special material 44.91*37.45*10.77MM	Black	PCS	1	Customer provided
1.2	063029-IA-02-TA	Antenna route		IDW27	CU:8-12UM、NI:2-4UM	argent	PCS	1	
Confirm:				Review:		Made:BYZ			

5.Reliability test report

The LDS antenna test report							
client	Love is	project name	IDW27	testing time	2024/4/1	product type	LDS
number	test item	test condition		requirement		test result	Judgment conclusion
1	Appearance test	Distance: 30cm distance from the object Time: confirm defects within 10 seconds Angle: the measured surface is 45 degrees; the measured object rotates up and down within 15 degrees Lighting: equivalent to a 40W fluorescent lamp		Cracking, stripping, oxidative corrosion, bubbles, bumps, heterocolor, deviation are not allowed		No abnormality seen	OK
2	cold test	Temperature-20℃, placed for 48h, no intermediate detection, recovery: under normal temperature state for 2h, bent antenna, Angle: 120 degrees, times: 3 times		Structure contrast, appearance contrast Key points: after low temperature test, the antenna has no peeling, cracks, wrinkles, severe allochromatic or chloror green; after bending, the antenna has no block peeling		No abnormality seen	OK
3	steady temperature damp test	Temperature + 60℃, RH 95%, placed at 96H, with no intermediate detection Recovery: recover for 2h at normal temperature		Structure contrast, appearance contrast Key: antenna no peel, cracks, wrinkles, severe hetereuchromatic or brass		No abnormality seen	OK
4	salt spray test	① NaCl and distilled water configuration, concentration 5 ± 0.1%, PH value 6.5~7.2; ② temperature: 35 ± 2℃ ; ③ spray water pressure: 80 KPa, ④ water flow: collecting		Structure contrast, appearance contrast Key points: the antenna has no stripping, cracks, wrinkles, and corrosive substances		No abnormality seen	OK

		container can collect 1.0~2.0ml saline solution per hour, ⑤ time: 48h, no intermediate detection Recovery: After removing the prototype, remove the surface saline with cotton cloth and toilet paper, and place it for 1H at room temperature				
5	Bige test	Draw 1001mm 1mm grids on the surface of the test antenna (1mmX1mm grids can be drawn in a small area), deep and paint the bottom; brush the test area with a brush; stick the test area with 3M600 tape and wipe the tape to increase the contact area and test area. After placing for 1 minute, grasp one end of the tape by hand, tear off the tape at 90 degrees, and conduct the same test in the same position	1, more than 1 / 2 of the top paint or coating fall off as unqualified; 2. After the 1X1mm grid is cut, if there is more than 1 / 4 of the area falling in the small grid, it is unqualified.(Or there are obvious debris in the process of cutting, which is unqualified)		No abnormality seen	OK
experiment conclusion:		qualified	test controler:	Zhong Qiuhong	examine and verify:	Feng Jiwu

8. Packaging information

Packaging method diagram		
product name	LDS antenna	
P / N	063029	
Project model	IDW27	
File details	Carton Size 1: 270*260*200MM Carton Size 2: 260*200*200MM Carton Size 3: Depending on the order quantity / volume	
	Boating method	Packaging by order quantity
	Total number of binning	Packaging by order quantity
labeling requirement	Tag Size 1: Universal use 100 * 100mm Tag Size 2: According to customer requirements	
matters need attention		
1. Due to the limitation of order quantity, the packing method of each material is the size of the box according to the total quantity of the order or the physical volume		
2. Storage temperature: room temperature		
3. Preservation conditions: store them in a cool and dry place		