

安特微智能通讯（深圳）有限公司

ATWE intelligent Communications(shenzhen)CO.,Ltd

number: ATW-GC-003 A/0

ANTENNA APPROVAL SHEET

Customer name: 丰禾源

Customer P/N:

Our P/N: ATWE-01-0323-010

product name: UT01A -BT

date of issue: 2023-01-30

Vendor recognition column:

Formulate	check	Approve

Customer acknowledgement column:

confirm	check	Approve

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Revision History

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I、Purpose:

1. Through the description of product characteristics and inspection standards in this acknowledgement, we can better communicate with customers, reach consensus, and avoid product quality disputes caused by insufficient communication. .
2. When our products need to be used in your outsourced factories, please contact the content of this acknowledgement with your outsourced.
3. Precautions for use environment:

The FPC antenna is designed according to the general use environment (0-25 degrees Celsius, temperature 30% -70% normal pressure). In the following occasions, the quality of the product will be reduced when used for a long time, please pay attention when using:

- 3.1. Reducing gas (Cl₂, H₂S, NH₃, etc).
- 3.2. Volatile / easy gas environment.
- 3.3. Places subject to direct water or high humidity condensation.
- 3.4. Locations of grease, chemicals, organic solutions.
- 3.5. Place of vibration.
- 3.6. In direct sunlight.

4、Custody and use

To prevent product discoloration, decreased solderability, and abnormal foaming during assembly, the following storage conditions must be observed.

- 4.1. High temperature and high humidity environment will cause product discoloration. It is recommended to manage and store in a constant temperature and humidity environment.
- 4.2. FPC's PI film is very easy to absorb moisture. If the temperature changes abruptly in a hygroscopic state, foaming will occur. It is recommended to pre-bake according to conditions before assembly (SMT, etc.). Please try to use the baked product within 2HR.

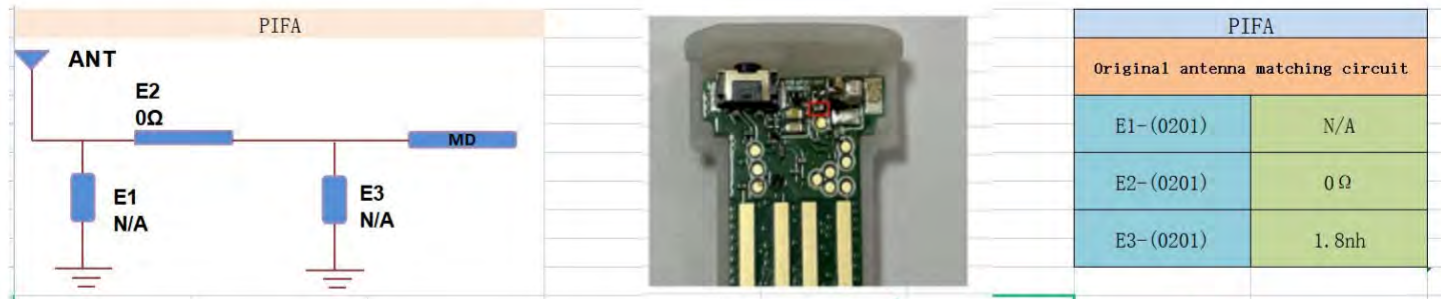
II、product material:

FPC PI	matte blackFPC, Single panel, one and a half materials
surface treatment	Silk screen matte black oil/matte white characters

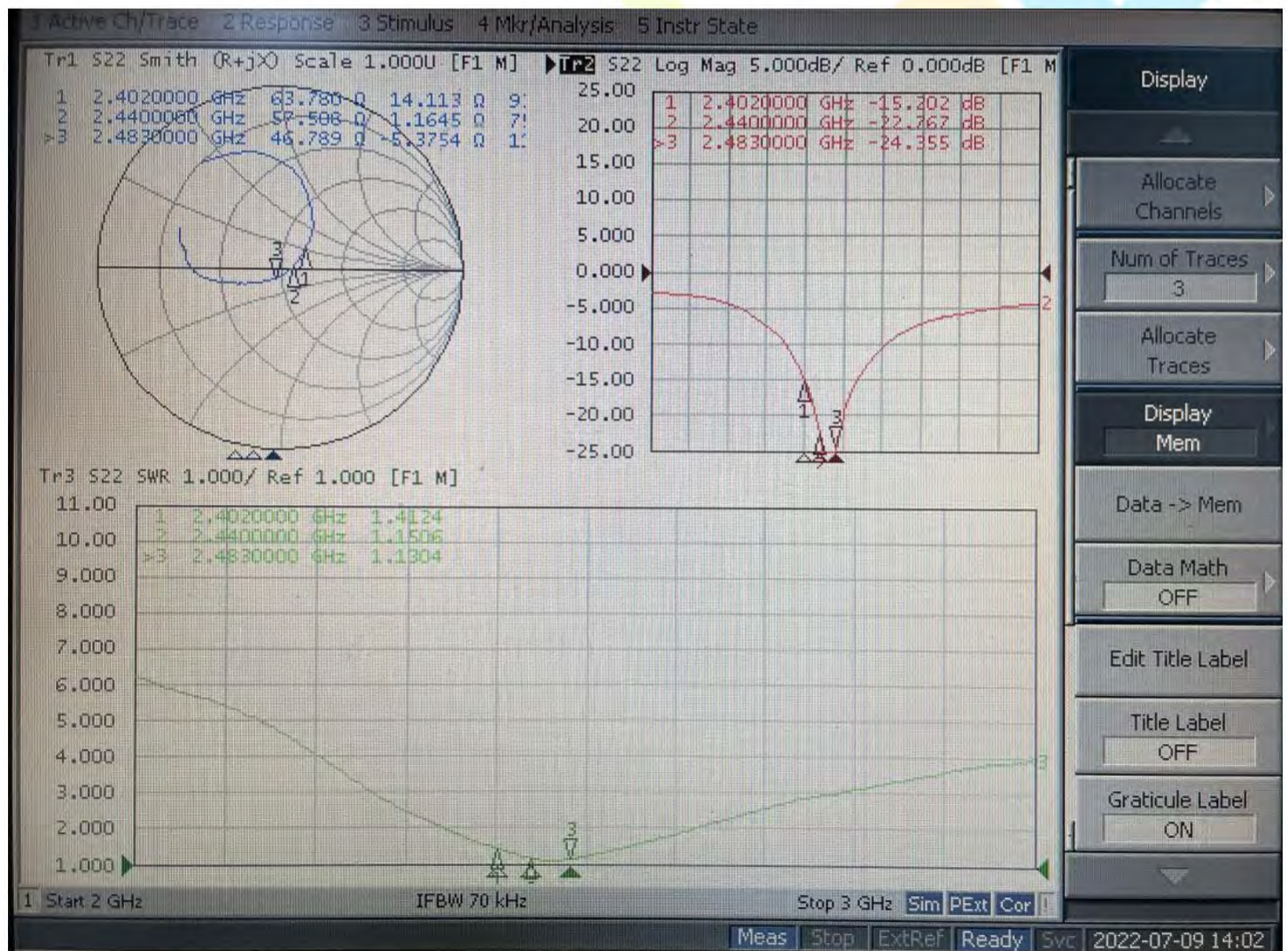
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III、Antenna test data

3.1 Antenna matching circuit



3.23.2 Antenna passive test data (free space)

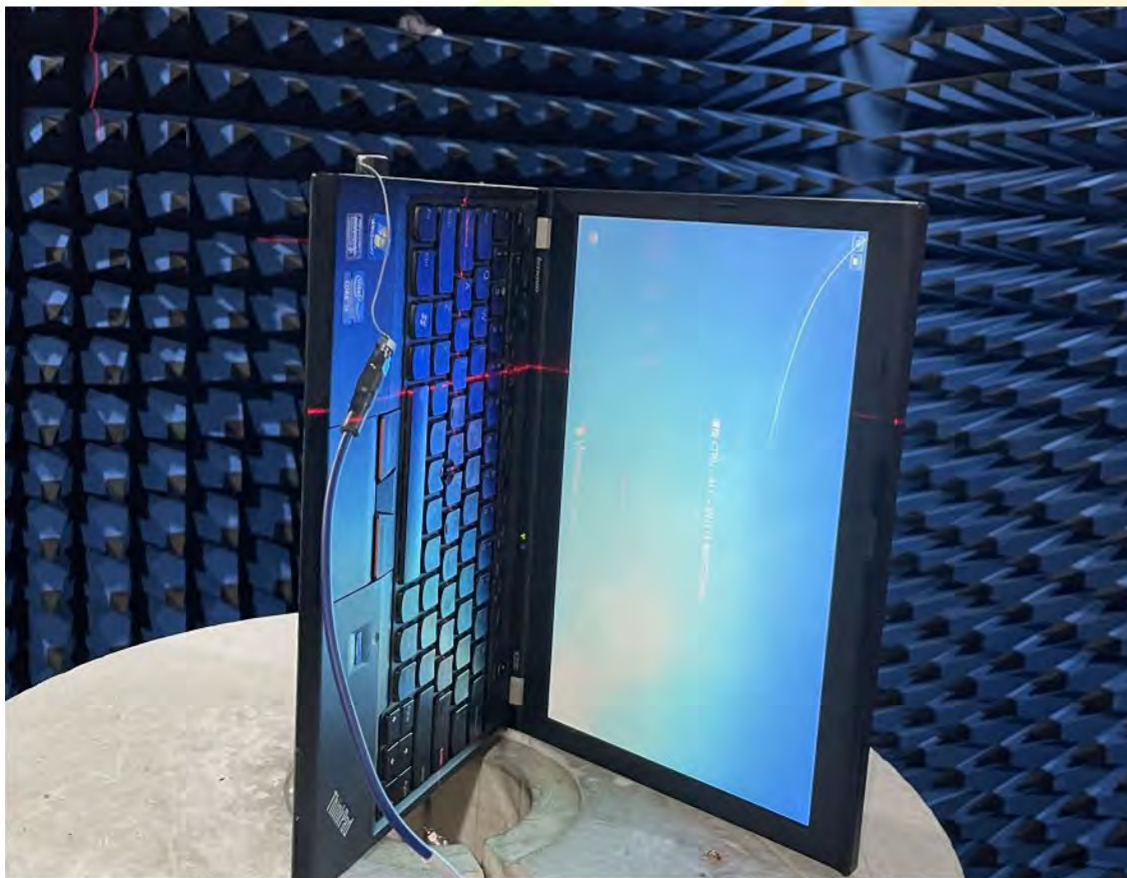


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3.3 Antenna efficiency test

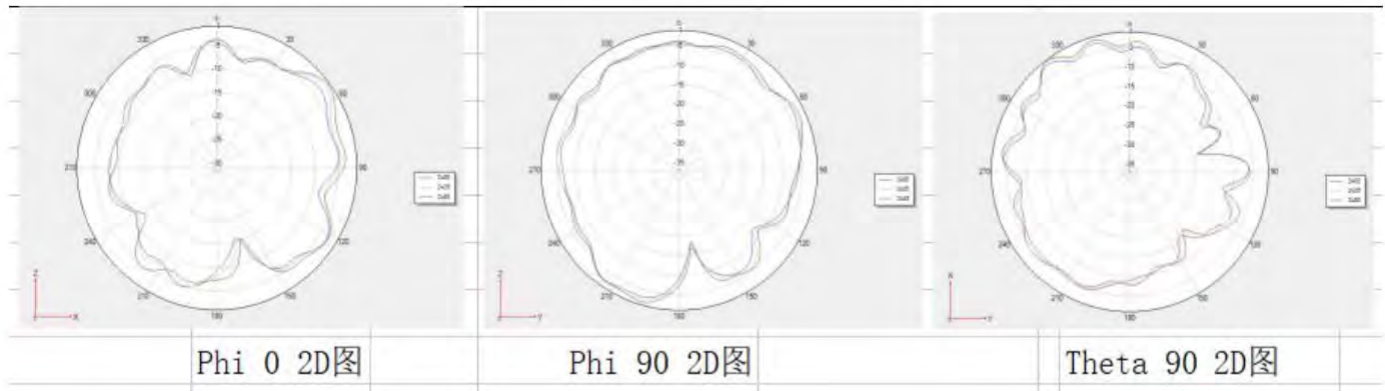
Bluetooth			
Frequency / MHz	Efficiency / dB	Efficiency / %	Gain
2400	-5.98	25.23	0.42
2410	-5.66	27.16	0.67
2430	-5.85	26	0.53
2450	-5.58	27.67	0.69
2460	-5.72	26.79	0.41
2470	-5.65	27.23	0.77
2480	-5.71	26.85	0.75
2490	-5.64	27.29	1.13

3.4 Description of Chamber Spherical Coordinate System

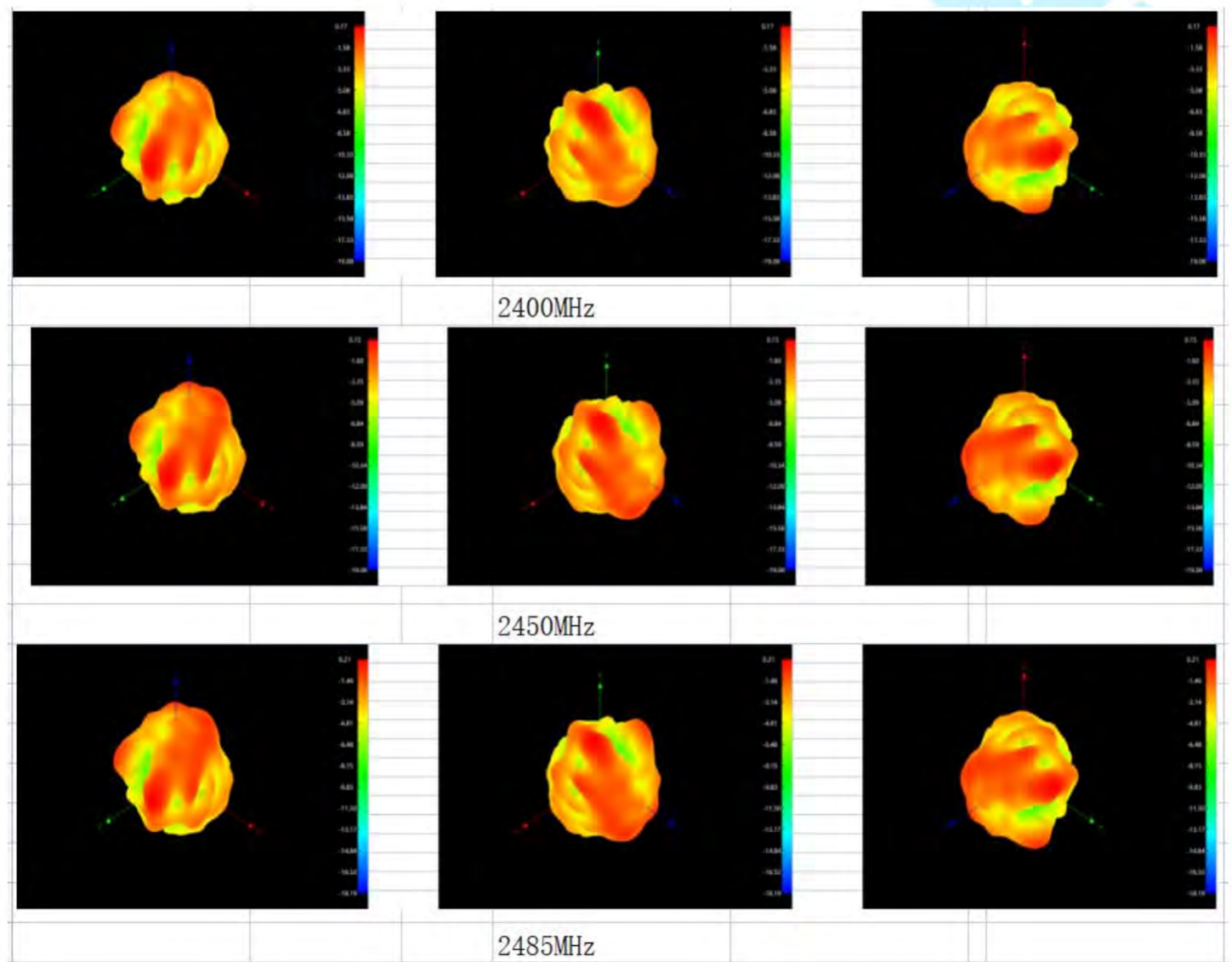


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3.5 2Ddirectional diagram



3.5 3Ddirectional diagram

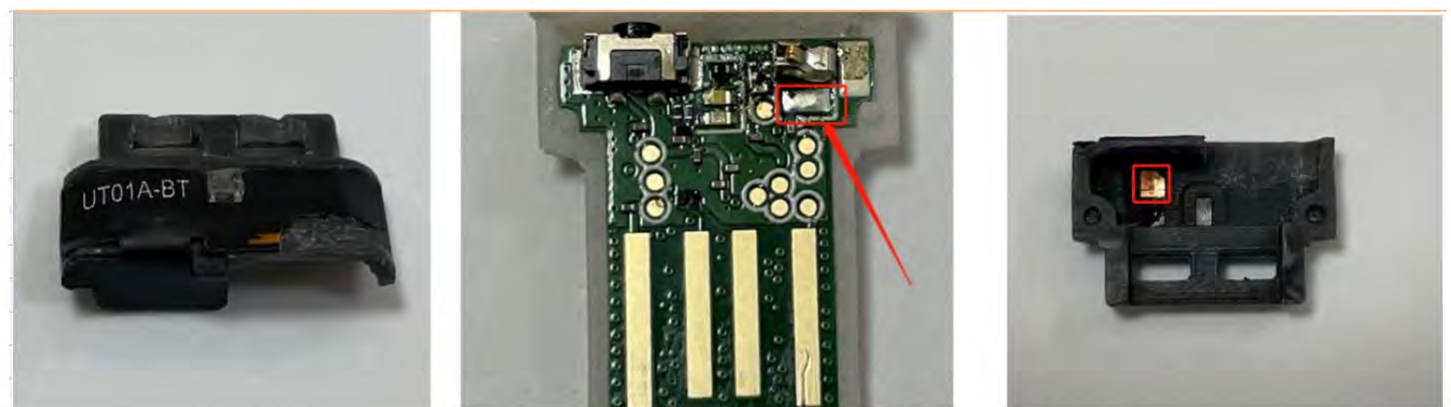


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3.6 OTA

2.4G	OTA		
CHAN	0	39	78
TRP (dBm)	5.63	5.64	5.91
TIS (dBm)	-87.76	-87.07	-88.22

IV、Antenna Assembly



Antenna area

Remove the antenna location thimble,
PIFAThe antenna was changed to a monopole antenna

Antenna gold finger position

VI、 Reliability Testing

Constant Temperature and Humidity、 Ink Adhesion Test Report							
Client	丰禾源		Date	2023-03-29		Specification	FPC
Project Name	UT01A-BT		Qty	2PCS		Test Time	280min
Test Purpose: Testing the reliability of products and the adhesion of coatings、 Coating resistance to oxidation and corrosion。							
Device Name: High and Low Temperature Test Chamber。							
Measuring Parameter							
Temperature	High Temperature		70℃	Low temperature	-40℃		Temperature Tolerance 1℃
Time	Constant Temperature	High Temperature	24h	High temperature rise	10min		Remark
		Low Temperature		Low Temperature Cooling			
Cycle Index	0		Other	Relative Humidity	95%		±1%
Visual Inspection	Hierarchy	ACC	Wrinkle	ACC	Blister	ACC	Ink shedding ACC
The judgment result ACC is passed , NG indicates invalid。							
Paint Adhesion Testing							
Instrument	Cross-Cut Tester、 3M600 Tape			Conclusion:	Three time 90° tension tests were performed on the 100 grid area at 3M600. Ink shedding area is less than 5%, Can meet the test requirements。		
							
Test Controller: Wei Jiang Rui				Audit: Chen Liang Wen			

VI、 Packing Criterion

ATWE Packaging Criterion

Project Name: UT01A-BT

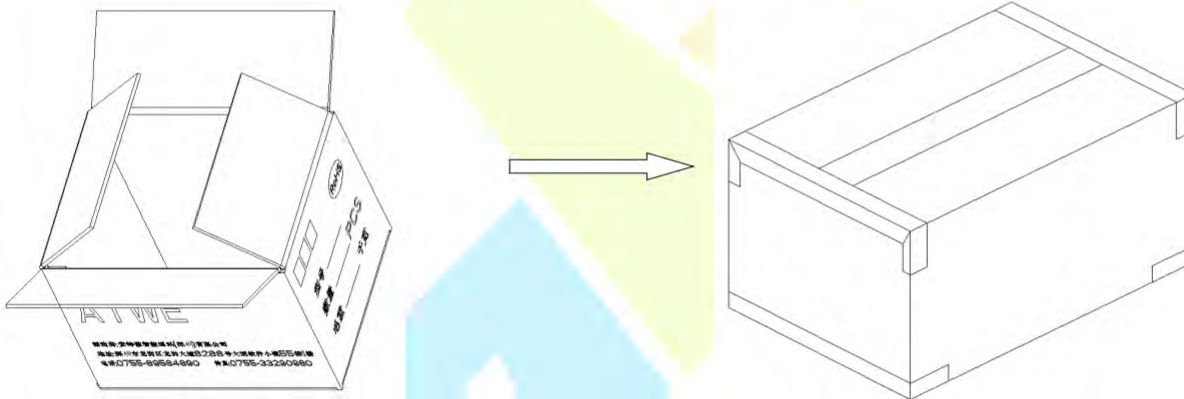
versions: V0

1. FPC antenna Half cut film full plate shipment

2. The full plate is enclosed in PE sealed pocket package---The quantity is based on the actual order.

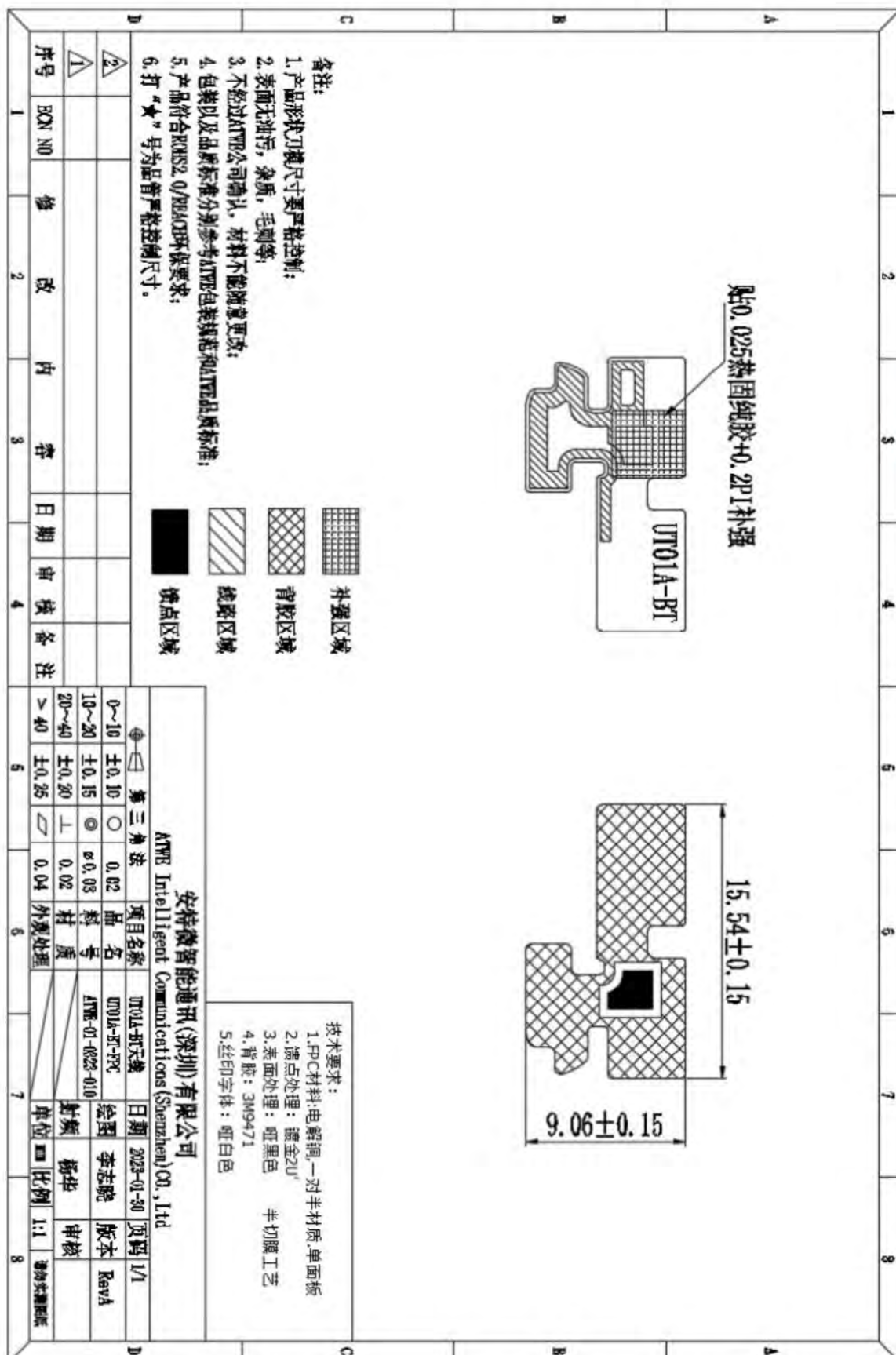
3. The quantity is subject to the actual order and packing quantity

4. The outer box is affixed with our production label and ROHS label



pay attention tot.: Because the project has not been formally opened mold, The above packing method is for reference only, The specific packaging is subject to official mass production !

VII、 structural drawings



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