安特微智能通讯（深圳）有限公司

ATWE intelligent Communications(shenzhen)CO.,Ltd

ID： ATW-GC-003 A/0

Antenna acknowledgment

Customer name：Guangzhou xingdongzhe

Customer part number：

Material code：ATWE-01-0448-010

Product name：M20T antenna

Date of issue：2023-12-26

Vendor recognition field:

Fiction	Structure audit	Give permission to
庾仪		

Customer recognition field：

Verify	Examine	Give permission to

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Catalogue

Admit the cover.....Page 1

Directory list.....Page 2

Change log..... .....Page 3

One、Bibliographic.....Page 4

Two、Product material.....Page 5

Three、Antenna test data.....Page 5-8

Four、Antenna assembly drawing.....Page 8-9

Five、Reliability test report.....Page 9-10

Six、Method of packing.....Page 11

Seven、Structure drawing.....Page 12

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Prepare/revise and change resume

Prepare/revise and change resume **Version**	Date	Change description	Remarks
V0	2023-6-23	First edition	

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One、Purpose：

1.Through the description of product characteristics and inspection standards in this acknowledgement, better communication can be carried out with customers.

Reach a consensus to avoid product quality disputes caused by inadequate communication。

2.When our products need to be used in your outsourcing factory, please contact your outsourcing company with the content of this acknowledgement.

3.Environmental considerations：

The FPC antenna is designed for general use environment (0 ~ 25 degrees Celsius temperature, 30% ~ 70% atmospheric pressure). When used for a long time, the quality of the product will be reduced in the following occasions. Please pay attention when using:

3.1.Reductive gas（C12，H2S，NH3 etc.）。

3.2.Volatile/alkene gas environment.。

3.3.Direct contact with water or high humidity dew place。

3.4.The place of oil, medicine liquid and organic solution。

3.5.A place of vibration。

3.6.A place in direct sunlight。

4.Storage and use

In order to prevent discoloration, deterioration of solderability, and abnormal foaming during assembly, the following storage conditions should be observed。

4.1.High temperature and high humidity will lead to discoloration of the product, it is recommended to manage and keep in a constant temperature and humidity environment。

4.2.The PI film of FPC is very easy to absorb moisture. If the temperature changes sharply in the hygroscopic state, it will produce foaming phenomenon.

It is recommended to prepare baking according to conditions before assembly (SMT, etc.). Please try to use the baked product within 2HR.

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Two、Product material：

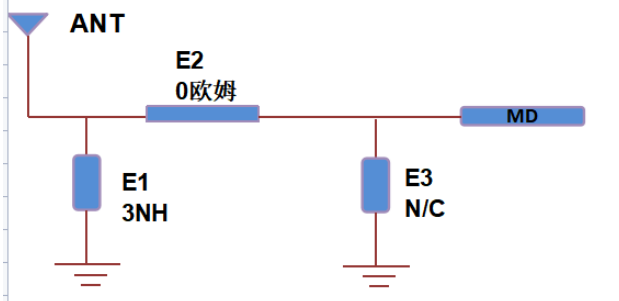
FPC Base material	Matte black FPC, single panel, one and a half material
Surface treatment	Screen printing matte black oil/matte white characters

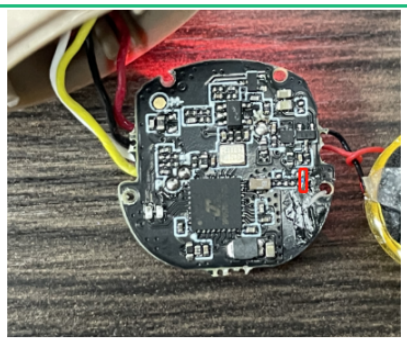
Three、Antenna test data

3.1 Antenna matching circuit modification schematic

天线匹配电路修改示意

L/R

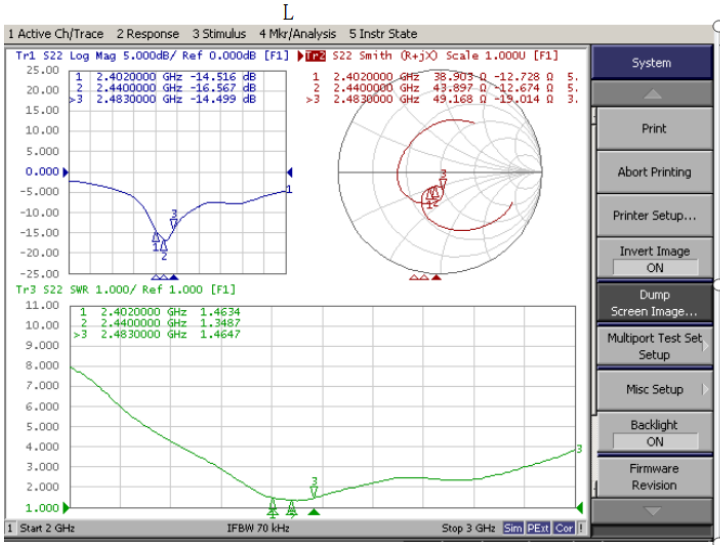




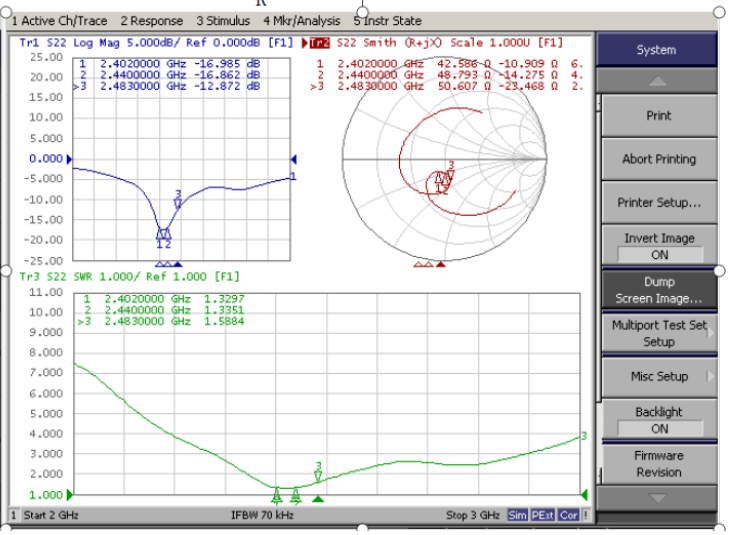
Monopole	
L/R	
E1-(0201)	3NH
E2-(0201)	0欧姆
E3-(0201)	N/C

3.2 Passive data/return loss

L



R



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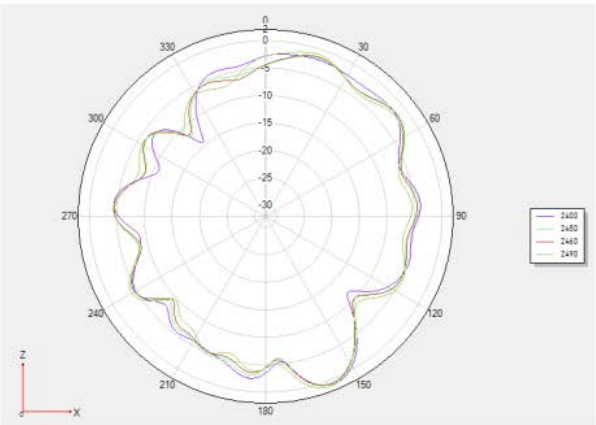
3.3 Passive efficiency

L			R		
BT			BT		
Frequency / MHz	Gain /dbi	Efficiency / %	Frequency / MHz	Gain /dbi	Efficiency / %
2400	1.38	49.55	2400	1.73	45.92
2410	1.73	45.92	2410	1.97	47.1
2430	1.97	47.1	2430	1.49	47.86
2450	1.49	47.86	2450	1.76	45.29
2460	1.76	46.29	2460	1.64	47.57
2470	1.64	46.57	2470	1.33	46.56
2480	1.33	46.56	2480	1.62	49.77
2490	1.62	49.77	2490	1.6	47.1

L/R：The maximum gain is 1.97dbi.

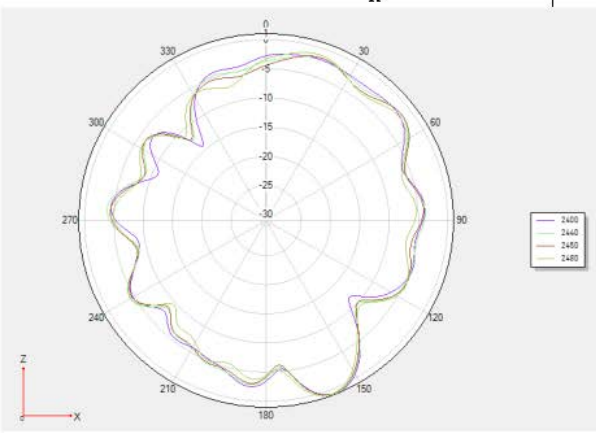
3.4 2D Directed graph

L

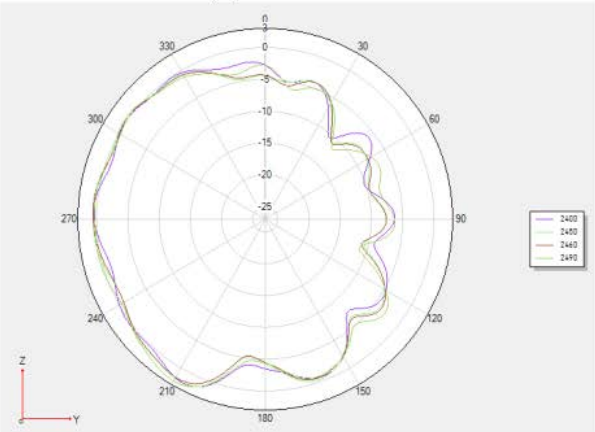


Phi 0 2D图

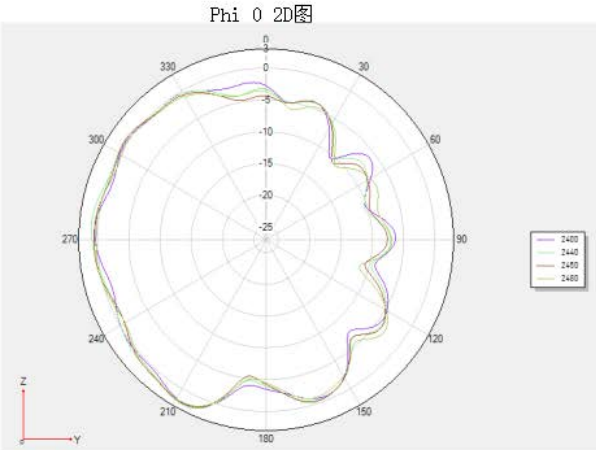
R



Phi 0 2D图



Phi 90 2D图



Phi 90 2D图

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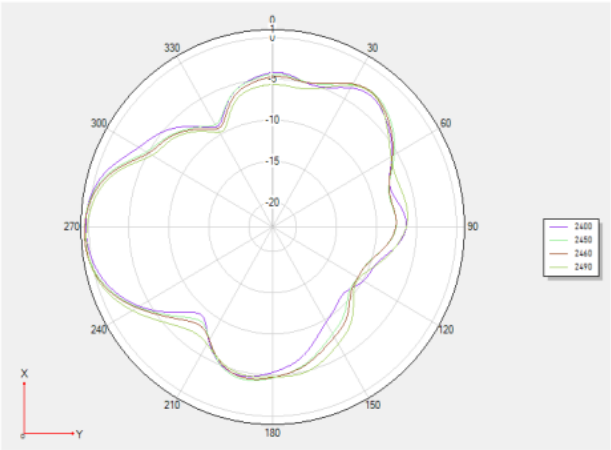
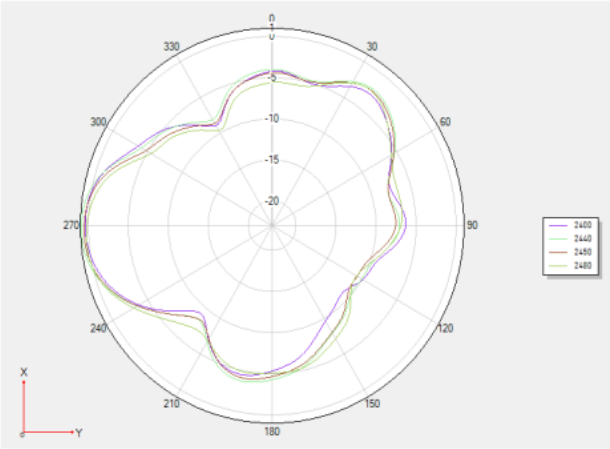
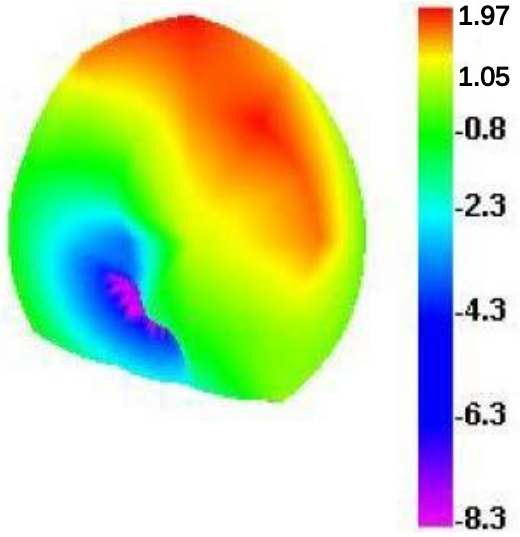


Theta 90 2D图



Theta 90 2D图

3.5 3D Directed graph Unit:dBi

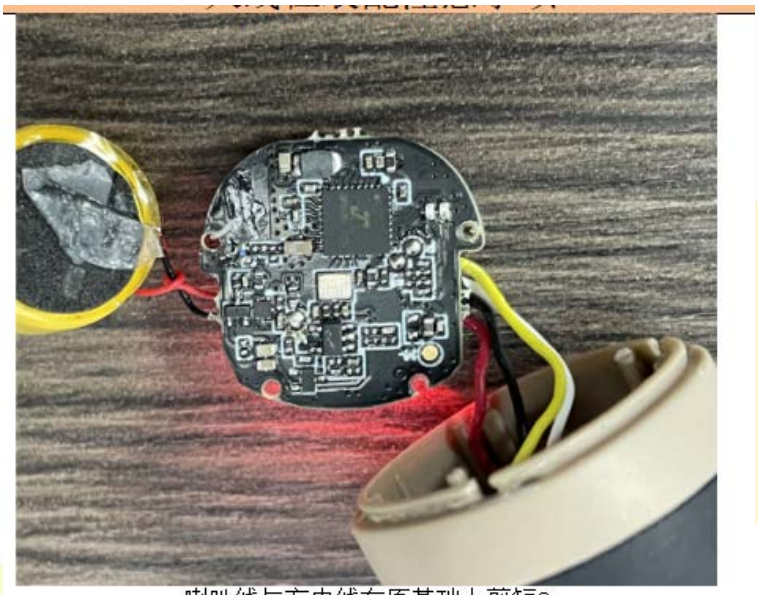


3.6 Free space

自由空间						
2.4G	L			R		
CHAN	0	39	78	0	39	78
TRP (dBm)	0.98	1.75	2.31	2.05	3.16	3.27
TIS (dBm)	-81.2	-84.5	-84.7	-81.5	-84.8	-84.6

Four、Antenna assembly diagram

4.1 Antenna bit assembly considerations



喇叭线与充电线在原基础上剪短8mm

4.2 Antenna location map

天线位置图

整机图

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Five、Reliability test report

安特微智能通讯(深圳)有限公司
ATWE Intelligent Communications (Shenzhen) Co., Ltd.

Constant temperature and humidity, ink adhesion test report					
Customer	Guangzhou Actor	Date	2023-06-23	Specifications	FPC
Product name	SW20T Antenna	quantity	2PCS	Test time	280min
Test objective: To test the reliability of the product and the adhesion of the coating, the oxidation resistance and corrosion resistance of the coating.					
Equipment Name: High and low temperature test box					

Test parameters

Temperature	High temperature		70℃	Low temperature	-40℃		Temperature tolerance	1℃
Time	Constant temperature	High temperature	24h	High temperature rise	10min		Remarks	
		Low temperature		Cool down				
Number of loops	0		Other	Relative humidity	95%		±1%	
Inspection of appearance	layering	ACC	Fold	ACC	Bubbling up	ACC	Shedding of ink	ACC
The judgment result is passed for ACC and rejected for NG.								

Hundred square test

Tools:	Bagel knife, 3M600 tape	Conclusion:	Conclusion: The ink shedding area is less than 5%, which can meet the test

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			requirements by 3 times 90° tensile test of 100 grid area with 3M600.
Tester：卫江蕊		Audit：陈良文	

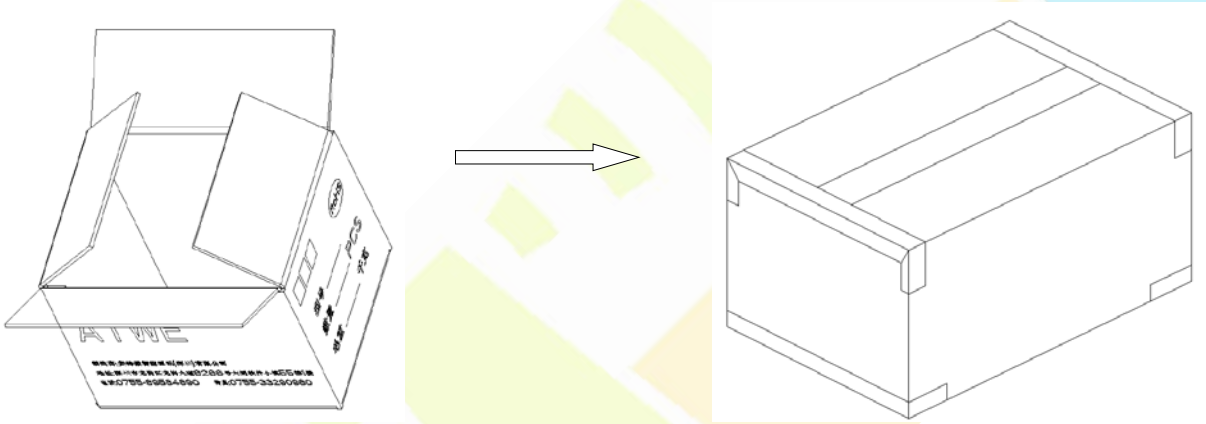
Six、Method of packing

ATWE Product packaging specification	
Product name： SW20T Antenna	Version： V0

One、FPC Antenna half cut film full version shipped

Two、Full sheet set in PE sealing pocket -- quantity is subject to actual order.

Three、Pack in big boxes. (The quantity is subject to the actual order and packaging quantity. 4. Seal the box, and attach our production label and ROHS label to the outer box



Note: Since the project has not been officially opened, the above packaging is for reference only, and the specific packaging is subject to the official mass production!

七、Eleven、Structure drawing

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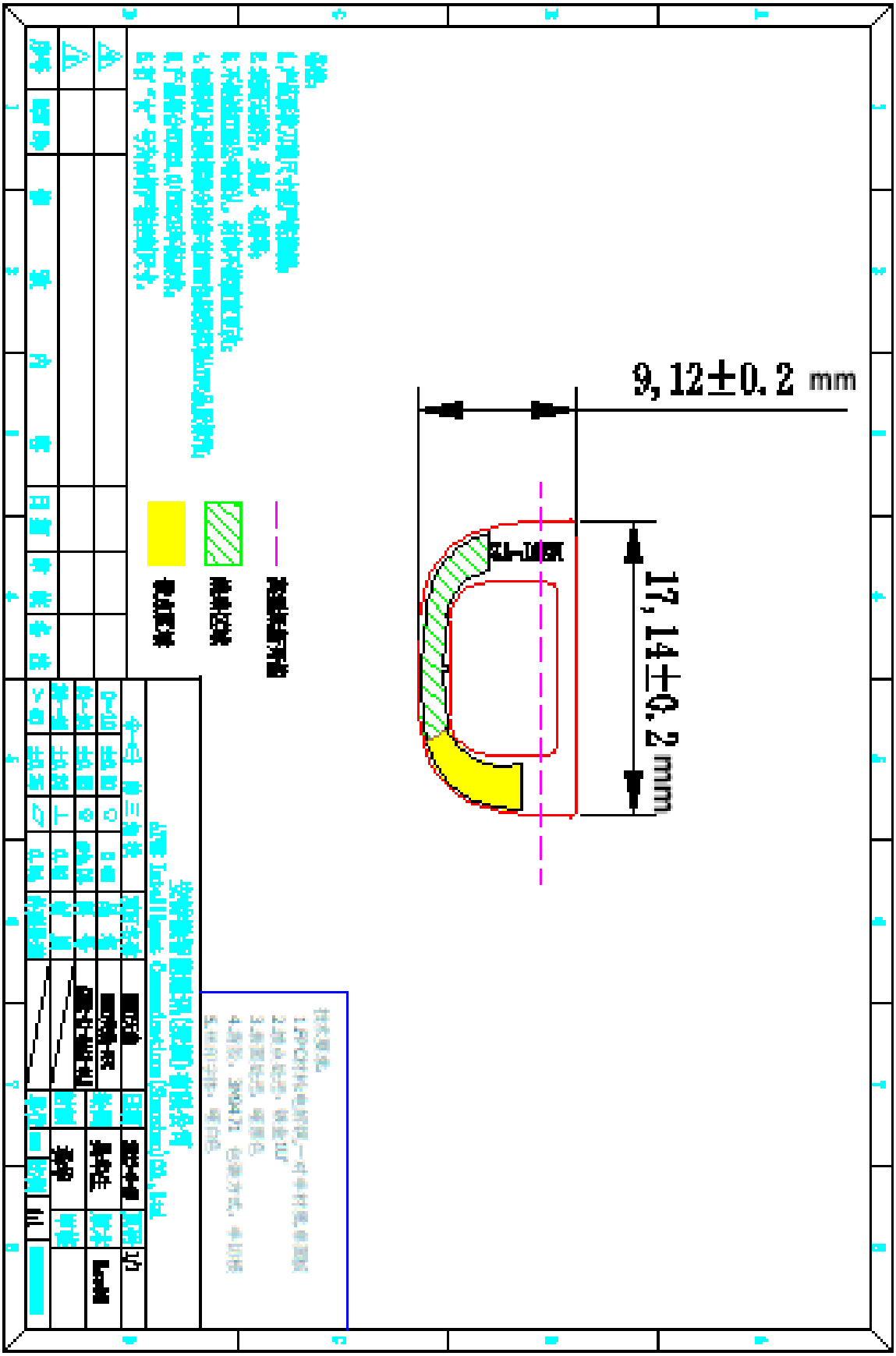
9,12±0.2 mm
17,14±0.2 mm