



Shenzhen Yuhong Industrial Co., Ltd

Parts Acknowledgment

Customer name:	Minami Acoustics Limited
Product Model:	E105D
Risuntek P/N:	216-000076-0
Version:	A
Product Name:	FPC antenna
Description:	22.80*4.60*0.11mm Length * width * thickness one side back glue
date:	2022/10/8

(Customer Signatures)

(PM)	(ME)	(QE)

(Inner Signatures)

(QE)	(ME)	(RF)
ASTON	Cindy	Jake

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catalogue

one、 Resume

two、 Product drawings

three Description of electrical and
mechanical properties

four、 Full scale measurement report

five、 CPK Report

six、 Substance deployment table

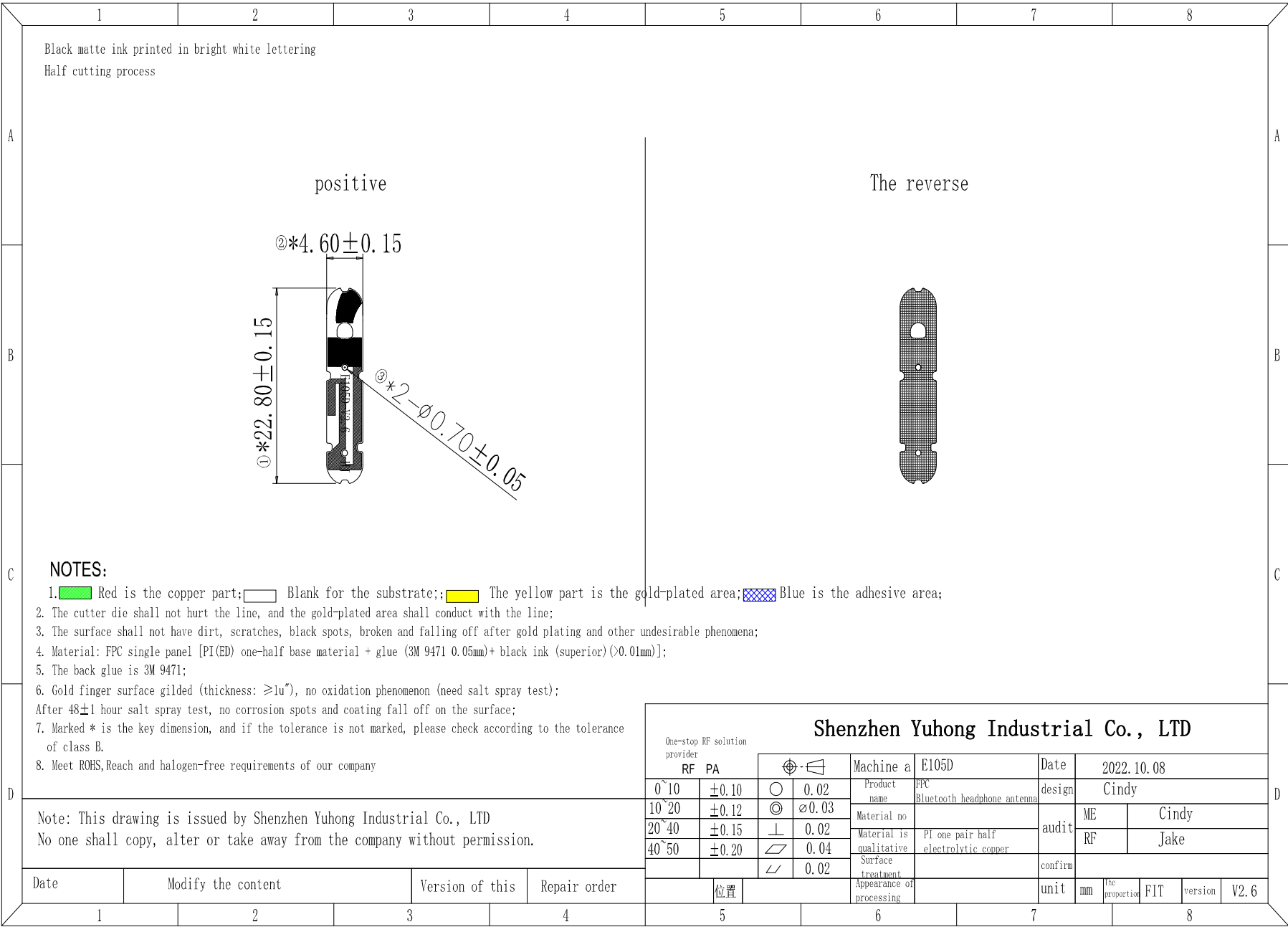
seven Reliability test report

eight Packaging specification

one、Preparation / revision change resume

editi on	Revision page	Change time	Changed by	Reason and content of change	remarks
A0	—	2022/10/8	Cindy	Antenna form of the first version	
A1					
A2					
A3					
A4					
A5					
A6					

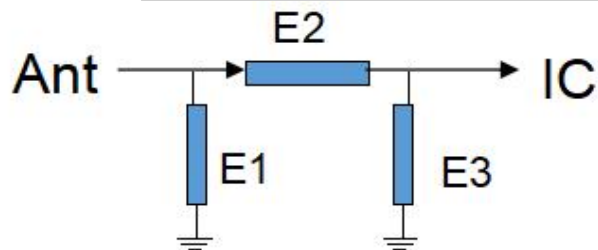
two、Product drawings



three、Description of electrical and mechanical properties

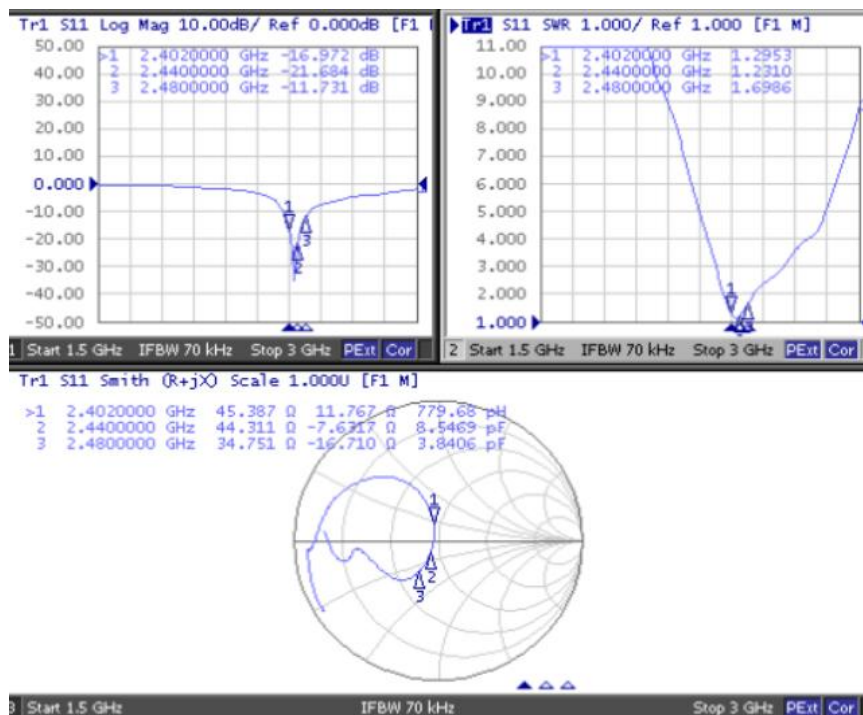
1、Match the circuit diagram

Description of antenna matching circuit



Element	Value
E1	N/C
E2	0Ω
E3	N/C

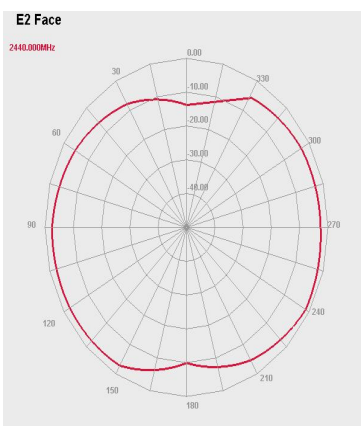
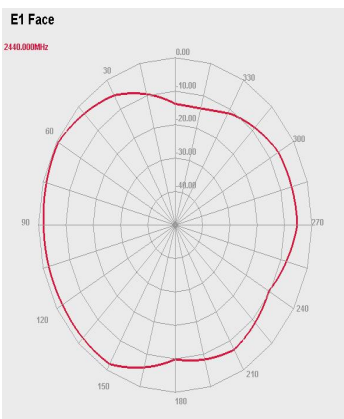
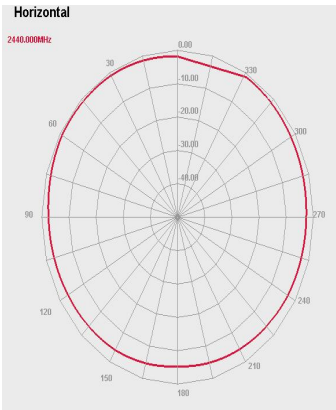
2、S11 parameter



3、The efficiency of passive

Freq[MHz]	Efficiency(%)	Gain(dBi)
	free space	free space
2400	27.4	0.1
2410	28.5	0.2
2420	28.6	0.2
2430	29.4	0.3
2440	32.4	0.2
2450	32.9	0.2
2460	31.4	0.3
2470	31.8	0.3
2480	29.7	0.1
2490	28.4	-0.1
2500	28.1	-0.2

4、Gain figure



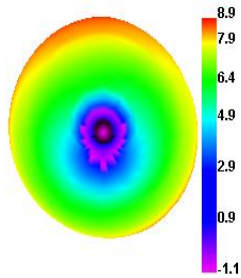
5、 Active OTA data

L	channel	TRP (dbm)	TRP (dBm)
free	0	7.4	-88.9
	39	8.0	-90.1
	78	8.2	-89.7
R	channel	TRP (dbm)	TRP (dBm)
free	0	6.3	-88.7
	39	7.5	-89.9
	78	7.6	-89.4

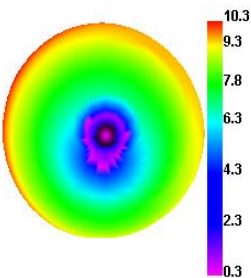
L	channel	TRP (dbm)	TRP (dBm)
Die head	0	-2.0	-79.3
	39	-1.8	-80.2
	78	-1.7	-79.5
R	channel	TRP (dbm)	TRP (dBm)
Die head	0	-2.4	-79.1
	39	-2.1	-79.5
	78	-1.8	-80.0

Free 3D orientation

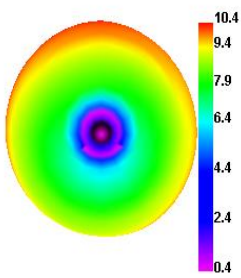
Bluetooth 0 TRP



Bluetooth 39 TRP

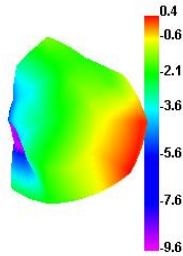


Bluetooth 78 TRP

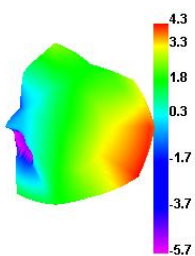


Head mold 3D orientation diagram

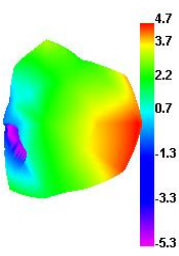
Bluetooth 0 TRP



Bluetooth 39 TRP



Bluetooth 78 TRP



four、Full-size measurement report

	code	216-000076-0		Part name		FPC antenna		Specifications	E105D FPC antenna				Material Science	One pair and half electrolytic copper
	supplier	Yuhong		Measuring tools		Quadratic element,		Measurement		MM			Date of measurement	2022.10.08
NO.	DIMENSION	upper limit	+ TOL.	- TOL.	lower limit	Measured 1	Measured 2	Measured 3	Measured 4	Measured 5	Measured 6	Measured 7	UPPER≤100%	LOWER≤100%
E105D	22.80	22.95	0.15	0.15	22.65	22.820	22.780	22.830	22.760	22.840	22.750	22.820	27%	33%
	4.60	4.75	0.15	0.15	4.45	4.620	4.630	4.570	4.620	4.580	4.610	4.620	20%	20%
	0.70	0.75	0.05	0.05	0.65	0.680	0.720	0.670	0.710	0.720	0.680	0.720	40%	60%

Prepared by: Zhang Qinghua

Reviewed by: maoluping

Date 2022/10/8

five、CPK Report

Shenzhen Yuhong Industrial Co., Ltd

Project name	E105D				Customer	Minami Acoustics Limited			
Description	antenna				Inspected	Cindy			
Material	One pair and half electrolytic copper				Inches/MM	mm			
Revision	A				Date	2022/10/08			
Dim. Designator	22.80	4.60	0.70						
Upper Limit	22.95	4.75	0.75						
Lower Limit	22.65	4.45	0.65						
1	22.78	4.60	0.70						
2	22.85	4.60	0.71						
3	22.84	4.64	0.70						
4	22.83	4.62	0.69						
5	22.82	4.61	0.70						
6	22.83	4.64	0.69						
7	22.84	4.64	0.70						
8	22.81	4.62	0.70						
9	22.80	4.62	0.71						
10	22.82	4.57	0.70						
11	22.82	4.58	0.69						
12	22.77	4.60	0.71						
13	22.79	4.61	0.70						
14	22.83	4.64	0.70						
15	22.85	4.60	0.69						
16	22.83	4.58	0.71						
17	22.77	4.62	0.69						
18	22.80	4.61	0.72						
19	22.77	4.56	0.70						
20	22.84	4.64	0.69						
21	22.77	4.63	0.71						
22	22.83	4.64	0.72						
23	22.84	4.64	0.69						
24	22.84	4.63	0.71						
25	22.85	4.65	0.72						
26	22.78	4.64	0.70						
27	22.85	4.61	0.71						
28	22.82	4.57	0.69						
29	22.83	4.61	0.71						
30	22.77	4.63	0.69						
31	22.80	4.65	0.69						
32	22.80	4.59	0.71						
MAX.	22.85	4.65	0.72						
MIN.	22.77	4.56	0.69						
AVERAGE	22.81	4.61	0.70						
STDEV	0.03	0.02	0.01						
CP	1.87	2.03	2.04						
Cpk	1.69	1.83	1.95						
TOOLING(测量工具)	卡尺	卡尺	卡尺						

Prepared by : aston Checked by : Cindy Approved by : Jake

six、Environmental management substance component deployment table

The Parts List of Enviromental Management Substances

Product Information		Supplier Contact Information		Report type	Confirm the result	remarks
Part name	FPC天线	Compony Name	Shenzhen Yuhong Industrial Co., Ltd	☒ RoHS 2.0	☐	Metal provides RoHS 4 items and other 10 items
Risuntek P/N	216-000076-0	Contact Name/Title	Aston	☒ HF	☐	Cl&br for non-metallic parts
Supplier's P/N	E105D	Date:YY/MM/DD	2022/10/8	☒ CP65	/	Parts in contact with skin
Manufacurering site	Dongguan	E-mail address		☒ REACH	☐	According to the latest SVHC list
Total weight (g)		Tel. No.	13714345069	☒ other ()	/	Such as be, pops, pfos/pfoa, etc
				☒ MSDS	☐	Article 17. Seal and validity

No.	Customer item number	Part name	Homogeneous material	Test Report No.	Test Date (YY/MM/DD)	Test result (ppm)													Test report	MSDS
						Pb	Cd	Hg	Cr6 +	PBB	PBD E	Cl	Br	DEHP	DBP	BBP	DIB P			
1	216-000076-0	Base material	Fubon base material	A2220120187101006E	2022. 4. 08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	 A2220120187101006E ROHS卤素	 基材MSDS.pdf	
2		Solder resist ink	High interest black oil	ETR22705905	2022/8/5	ND	ND	ND	ND	ND	ND	434	ND	ND	ND	ND	ND	 ETR22705905 PSM-800黑色阻焊	 ETR22705913 PSM-800黑色阻焊	 MSDS_PS-800黑色油墨.pdf
3		Gummed paper	3 m9471	CANEC2200386501	2022/1/12	ND	ND	ND	ND	ND	ND	162	ND	ND	ND	ND	ND	 CANEC2200386501 3M9471LE背	 CANEC2200386502 3M9471LE背	 MSDS_3M9471白色.pdf
4		Gold plated	Gen da	A2210415672101002E	2021/10/15	ND	ND	ND	ND	ND	ND	124	ND	ND	ND	ND	ND	 A2210415672101002E镀金ROHS	 跃电金MSDS报告 2021013009242	
5		White ink	Chuan yu	ETR21A04957M01	2021/10/29	ND	ND	ND	ND	ND	ND	625	ND	ND	ND	ND	ND	 ETR21A04957M01 ZSR-150白色油墨	 MSDS_ZSR-150白色文字油墨.pdf	

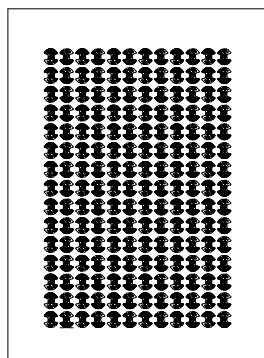
seven、Reliability test report

customer			Minami Acoustics Limited	entry name	E105D FPC antenna
Test time:			2022/10/06---2022/10/08	Number of tests	5PCS for each test item
Serial number	Test items	Test instrument	test method	Criteria:	determine
1	Salt spray test	Salt spray test machine	The tested products were placed in the salt spray testing machine containing 5%±1%Nacl solution. The laboratory temperature was 35° , the pressure barrel temperature was 47° , and the pressure was 1kgf/cm2. The test lasted for 48 hours. The product shall be placed at 45° . After the test, the product shall be taken out, washed and dried for inspection	Appearance after test: The appearance is intact without significant change. Coating: no peeling, no corrosion. Surface spraying, screen printing: no off, no bubbles to determine	PASS
2	Cold and hot shock	Constant temperature and humidity box	Put the test product flat in the testing machine, set the test conditions, high temperature is 85℃, a cycle test for 24 hours; The low temperature was -30℃, and the test was conducted for 2 cycles. The test was started after setting. At the end of the test, the product was removed for inspection after 2 hours of recovery.	There is no change in color, gloss, surface appearance, hardness, scratch, crack, warping or electrical damage. Be judged as qualified	PASS
备注:					
Tabulation: Aston		Reviewed by: Cindy		Approved by: Jake	

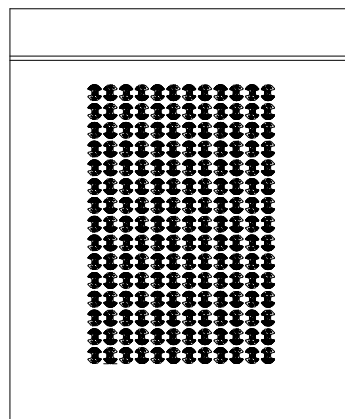
eight、Packing

Material no:	216-000076-0	The product name:	FPC antenna
Product specification:	E105D FPC antenna	Packaging materials:	Seal pockets, cartons
Number of packages:	5000PCS/package	The packing way:	5000pcs/ package, one box of 1-16 packages
Packing quantity:	80000PCS		

1、 Small package

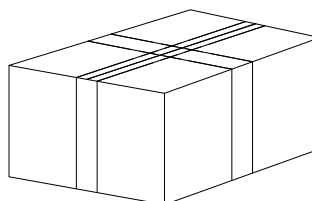
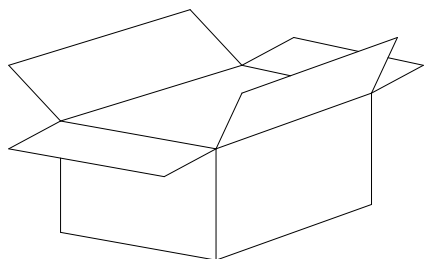


FPC antenna (full plate half cut shipment): 250*200



PE bag 5000PCS antenna

2、 The big package



一箱 1-8袋 (5000-80000PCS天线)

3、Note: FPC products are manufactured by half cutting,

Small package quantity: 5000pcs / bag;

Large package quantity: 5000-80000pcs / box

4. Precautions:

4.1 the storage of products shall ensure that the ambient temperature is between $-10^{\circ}\text{C} \sim +24^{\circ}\text{C}$, the humidity is less than 90%, the warehouse is free of rain leakage, the ground is moisture-proof, and the surrounding of the warehouse is protected from acid fog and salt fog. The storage period of the product is 180 days;

4.2 the products can be transported by land, water and air, and shall be protected from rain during transportation;

4.3 stacking requirements: XXX;

(other requirements, such as: no throwing from height, etc.)

Draw up: Aston

to examine: Cindy

approval: Jake