深圳市宇鸿实业有限公司

Shenzhen Yuhong Industrial Co., LTD

零件规格书

Specification of parts

客户名称/Customer name:	东莞市元烽伦电子有限公司
产品机型/Product Model:	TW303
客户料号/Risuntek P/N:	/
版本/Version:	A0
零件名称/Prodcut Name:	FPC天线/FPC antenna
产品描述/Description:	BT2400-FPCB内置蓝牙耳机天线
日期/Date:	2023/11/24

客户签署
(Customer Signatures)

项目 (PM)	结构 (ME)	品质 (QE)

我司签署
(Our signature)

品质 (QE)	结构 (ME)	射频 (RF)
杨进	张清花	毛路平

地址：深圳市龙华新区民治大道与工业西路交汇展滔科技大厦A座1308
Address: 1308, Block A, Zhantao Technology Building, intersection of Minzhi Avenue and Industrial West Road, Longhua New District, Shenzhen
telephone：0755-21031946
http://www.yuhong-co.com/

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Electrical and mechanical properties

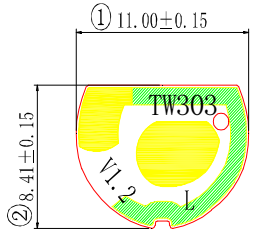
一、制/修订变更履历表
Prepare/revise the resume

版本 edition	修订页面 Revision page	变更时间 Change time	变更人 Alteration party	变更原因及内容 Reason and content of change	备注 remark
A0	—	2023/11/24	Cindy	初版天线形式 First version of the antenna form	
A1					
A2					
A3					
A4					
A5					
A6					
A7					
A8					
A9					

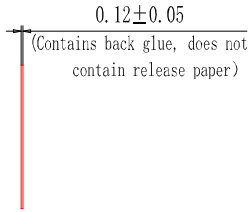
二、产品图纸
Product drawing

Environmentally friendly RoHS 2.0

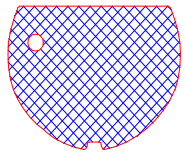
Version	Date	Change Description
V1.2	2023-8-06	New Issue



Vertical view



End view



Bottom view

NOTES:

1. The green part is ma de of copper; Blank is the base material;
   The yellow part is the gold-plated area; Blue is the adhesive area;
2. The die can not hurt the line, and the gold-plated area should be connected with the line;
3. The surface should not have dirt, scratches, black spots, breakage and falling off after gold plating;
4. Material: FPC single panel [PI(ED) a pair of half substrate (0.063mm)+ adhesive (3M 9471 0.05mm)+ surface black ink (Youli)(>0.01mm)];
5. The back glue is 3M 9471;
6. Gold finger surface gold-plated (thickness: ≥1u″), no oxidation phenomenon (salt spray test required);
   After 48±1 hours of salt spray test, there were no corrosion points on the surface and the coating fell off;
7. The front screen print is in bright white font. The screen print position and font size are shown in the figure;
8. Mark * as the key dimensions, please check according to standard tolerances if not marked;
9. Meet our ROHS,Reach, halogen-free requirements.

Electrical performance:
1、Test the continuity of the circuit
2、conductivity: 35~58m/(Ω·mm2)

Physical and chemical properties:
1、The golden finger should not have oxidation phenomenon (salt spray test is required)
2、After 48 ± 1 hour of salt spray test, There are no corrosion points on the surface and the coating is not peeling off.

TOLERANCE TABLE

0~10	±0.10	○	0.02
10~20	±0.12	◎	φ0.03
20~40	±0.15	⊥	0.02
40~50	±0.20	▱	0.04
50~100	±0.25	∠	0.02
UNIT:mm			

APPROVED: MAO LU PING
CHECHED: LONG TAO
DRAWING: ZHANG QING HUA

PRODUCT NAME: FPC
PRODUCT NUMBER: TW303-L
CUTTING TECHNOLOGY: HALF CUTTING PROCESS

VERSION	PROPORTION	PAGE SIZE	PAGE NUMBER
V1.2	1:1	By Graph zoom	1/1

深圳市宇鸿实业有限公司
Shenzhen Yuhong Industrial Co., Ltd

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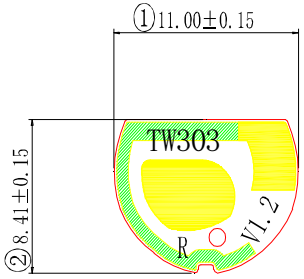
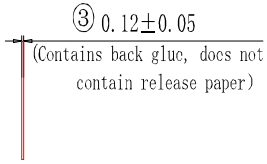
Environmentally friendly RoHS 2.0

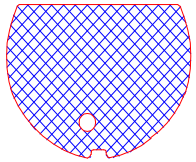
Version	Date	Change Description
V1.2	2023-8-06	New Issue



Vertical view



End view



Bottom view

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10~20	±0.12	◎	ϕ0.03
20~40	±0.15	⊥	0.02
40~50	±0.20	▱	0.04
50~100	±0.25	⌓	0.02
UNIT:mm			

APPROVED: MAO LU PING

CHECHED: LONG TAO

DRAWING: ZHANG QING HUA

PRODUCT NAME: FPC

PRODUCT NUMBER: TW303-R

CUTTING TECHNOLOGY: HALF CUTTING PROCESS

VERSION	PROPORTION	PAGE SIZE	PAGE NUMBER
V1.2	1:1	By Graph zoom	1/1

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Shenzhen Yuhong Industrial Co., Ltd

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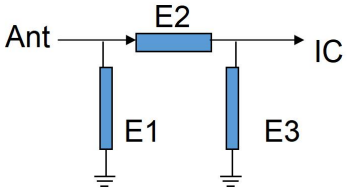
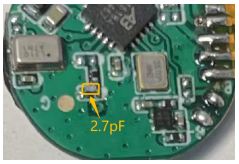
三、电气、机械性能说明

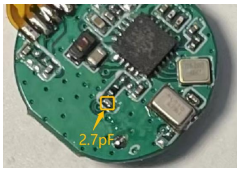
Electrical and mechanical properties

1、匹配电路图/Match the circuit diagram



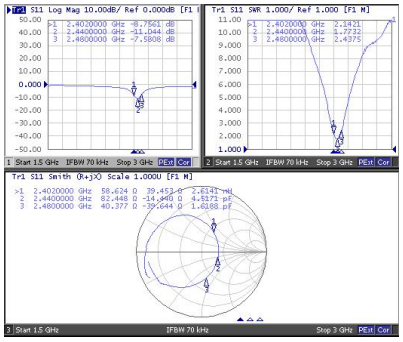
Element	Value
E1	ESD
E2	0Ω
E3	2.7PF



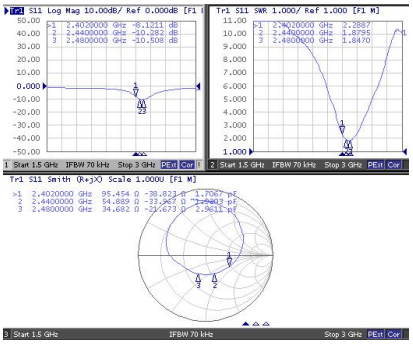


2、S11参数/S11 Parameters

L



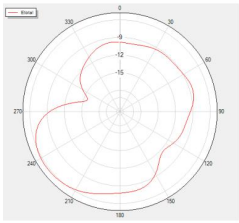
R



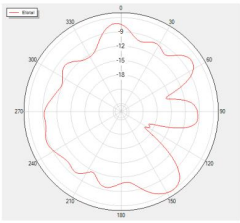
3、无源效率/Passive efficiency

L				
频点MHz	增益(dBi)自由 Gain (dBi) freedom	效率（%）自由 Efficiency (%) Freedom	增益(dBi)头模 Gain (dBi) head die	效率（%）头模 Efficiency (%) head mold
2400	-2.48	24.59	-7.77	5.88
2410	-2.14	25.61	-7.67	5.49
2420	-2.05	25.87	-7.78	5.79
2430	-1.92	26.63	-6.79	5.44
2440	-1.79	26.47	-6.88	5.67
2450	-1.56	25.13	-6.59	5.12
2460	-1.78	25.44	-6.7	5.32
2470	-2.24	24.6	-7.61	5.33
2480	-2.59	24.7	-7.73	5.87
2490	-2.52	23.64	-7.69	4.85
2500	-2.59	23.89	-7.49	4.47
平均值/AVG	-2.15	25.14	-7.34	5.38

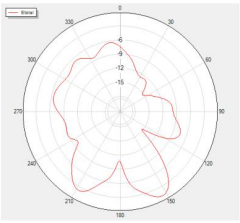
Theta=90 Freq=2440MHz



Phi=90 Freq=2440MHz

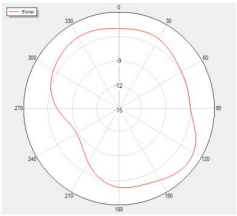


Phi=0 Freq=2440MHz

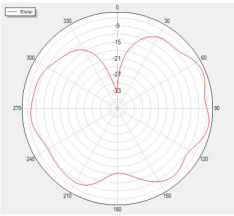


R				
频点MHz	增益(dBi)自由 Gain (dBi) freedom	效率（%）自由 Efficiency (%) Freedom	增益(dBi)头模 Gain (dBi) head die	效率（%）头模 Efficiency (%) head mold
2400	-2.49	25.54	-8.05	5.91
2410	-2.37	26.38	-7.04	5.96
2420	-2.42	26.47	-7.58	5.14
2430	-2.59	25.49	-7.94	5.68
2440	-2.37	27.08	-7.04	5.38
2450	-2.78	26.12	-7.88	5.30
2460	-2.89	25.53	-7.69	6.09
2470	-2.37	26.1	-7.55	5.49
2480	-2.55	25.6	-7.54	5.08
2490	-2.69	23.58	-7.56	4.96
2500	-3.15	23.05	-7.48	5.01
平均值/AVG	-2.61	25.54	-7.58	5.45

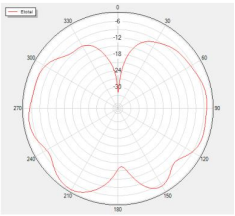
Theta=90 Freq=2440MHz



Phi=90 Freq=2440MHz

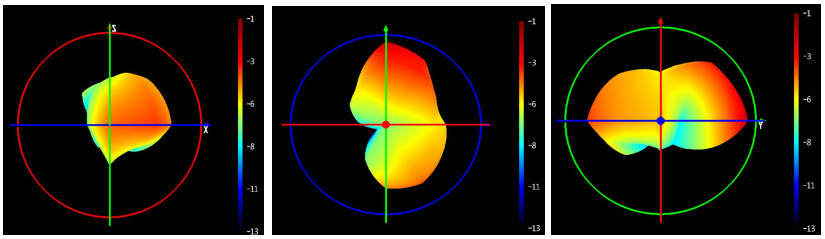


Phi=0 Freq=2440MHz

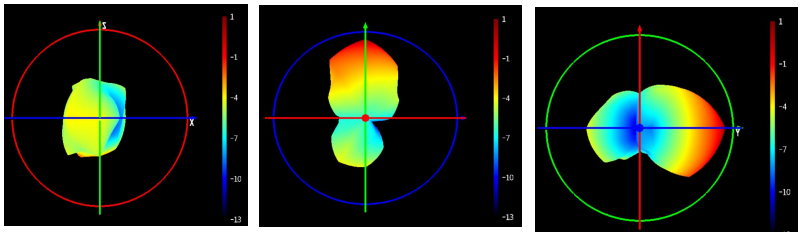
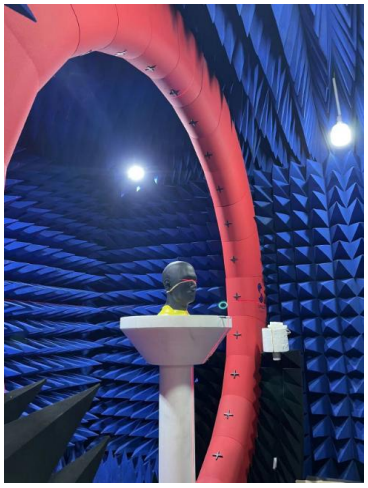
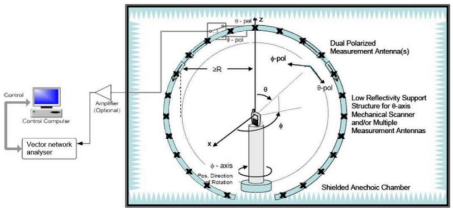


4、 有源OTA数据/Active OTA data

L	信道/channel	TRP（dbm）	TRP（dBm）
自由空间 Free space	0	0.3	-80.6
	39	0.5	-81.8
	78	0.4	-81.5
L	信道/channel	TRP（dbm）	TIS（dbm）
二代头模 Second generation head die	0	-6.9	-75.8
	39	-6.5	-75.9
	78	-6.3	-75.4



R	信道/channel	TRP（dbm）	TRP（dBm）
自由空间 Free space	0	1	-81.1
	39	1.3	-82.6
	78	1.8	-83.4
R	信道/channel	TRP（dbm）	TIS（dbm）
二代头模 Second generation head die	0	-6.2	-76.5
	39	-5.5	-76.3
	78	-5.8	-76.1



5、 测试环境/Test environment