



Shenzhen Yuhong Industrial Co., Ltd

Antenna specification

Customer name:	Dongguan Hele Electronics Co.,Ltd
Product Model:	TW09
Risuntek P/N:	10.157.000112
Version:	A
Prodcut Name:	FPC antenna
Description:	TW09 JL7006F FPC R ANT+Touch V1.7 Yuhong
Date:	2023/2/16

(Customer Signatures)

(PM)	(ME)	(QE)

(Inner Signatures)

(QE)	(ME)	(RF)
Aston	Cindy	jim.su

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Minzhi Avenue and Gongye West Road, Longhua New District, Shenzhen

telephone: 0755-21031946

<http://www.yuhong-co.com/>

catalogue

One、 Resume

Two、 Product drawings

Three Description of electrical and
mechanical properties

one、Preparation / revision change resume

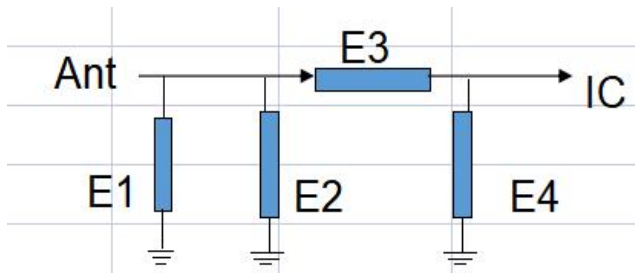
editi on	Revision page	Change time	Changed by	Reason and content of change	remarks
A0	—	2023/2/16	Cindy	First version of the antenna form	
A1					
A2					
A3					
A4					
A5					
A6					

	1	2	3	4	5	6	7	8																																																													
A	Black matte ink printed white glossy font Half-cut process																																																																				
B	front				R	reverse																																																															
C	① 11.33±0.15 ② 10.94±0.15																																																																				
D	NOTES: 1. The green part is made of copper; Blank is the base material; The yellow part is the gold-plated area; Blue is the glue area; 2. The knife die can not hurt the line, the gold-plated area should be connected with the line; 3. The surface shall not have dirt, scratches, black spots, fracture and fall off after gold plating and other undesirable phenomena; 4. Material: FPC single panel [PI(ED) a pair of half base material (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 plating (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. Mark * as the key size, without marked tolerance, please check according to Class B tolerance. 8. Meet our RoHs, Reach, halogen-free requirements.				<table><tr><td colspan="4">One-stop RF solution provider</td><td colspan="4">Shenzhen Yuhong Industrial Co., LTD</td></tr><tr><td colspan="2">RF PA</td><td colspan="2"></td><td>Machine a</td><td>TW09-R</td><td>Date</td><td colspan="2">2022.11.25</td></tr><tr><td>0~10</td><td>±0.10</td><td>○</td><td>0.02</td><td>Product name</td><td>FPCBluetooth earphone antenna</td><td>design</td><td colspan="2">Cindy</td></tr><tr><td>10~20</td><td>±0.12</td><td>◎</td><td>∅0.03</td><td>Material no</td><td></td><td rowspan="2">audit</td><td>ME</td><td>Cindy</td></tr><tr><td>20~40</td><td>±0.15</td><td>⊥</td><td>0.02</td><td>Material is qualitative</td><td>Pl One and a half pairs of electrolytic copper</td><td>RF</td><td>jim</td></tr><tr><td>40~50</td><td>±0.20</td><td>▱</td><td>0.04</td><td>Surface treatment</td><td></td><td>confirm</td><td colspan="2"></td></tr><tr><td></td><td></td><td>∟</td><td>0.02</td><td>Appearance of processing</td><td></td><td>unit</td><td>mm</td><td>The proportion FIT version V1.7</td></tr></table>				One-stop RF solution provider				Shenzhen Yuhong Industrial Co., LTD				RF PA				Machine a	TW09-R	Date	2022.11.25		0~10	±0.10	○	0.02	Product name	FPCBluetooth earphone antenna	design	Cindy		10~20	±0.12	◎	∅0.03	Material no		audit	ME	Cindy	20~40	±0.15	⊥	0.02	Material is qualitative	Pl One and a half pairs of electrolytic copper	RF	jim	40~50	±0.20	▱	0.04	Surface treatment		confirm					∟	0.02	Appearance of processing		unit	mm	The proportion FIT version V1.7
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	Note: This drawing is issued by Shenzhen Yuhong Industrial Co., LTD No one shall copy, alter or take away from the company without permission.																																																																				
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			Appearance of processing	unit mm	The proportion FIT version V1.

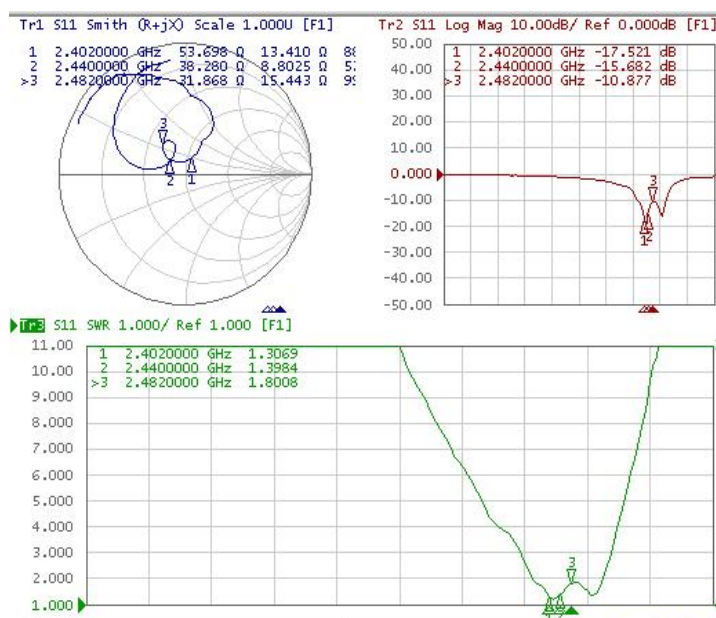
三、Specification of electrical and mechanical properties

1、Match the circuit diagram



Element	Value
E1	ESD
E2	1.2nH
E3	0ohm
E4	0.5pF

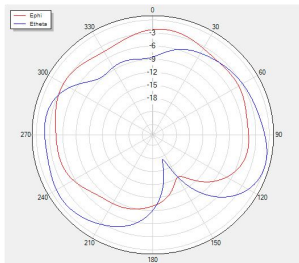
2、S11 parameter



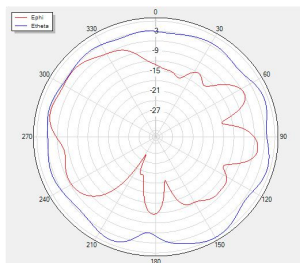
3、Passive efficiency

Freq[MHz]	Gain(dBi)	Efficiency (dB)	Efficiency
	Free space	Free space	Free space
2400	-1.1	-4.91	32.32
2410	-0.97	-5.08	31.05
2420	-0.79	-5.24	29.89
2430	-0.59	-5.4	28.82
2440	-0.41	-5.53	28
2450	-0.12	-5.55	27.87
2460	0.25	-5.49	28.27
2470	0.62	-5.42	28.69
2480	0.95	-5.36	29.09

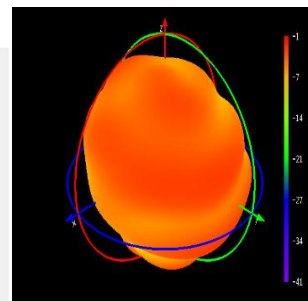
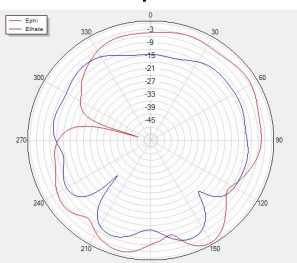
Theta=90 freq=2400MHz



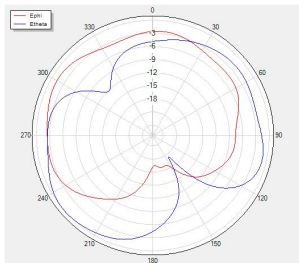
Phi=90 freq=2400MHz



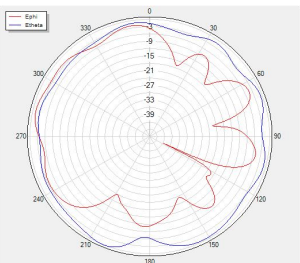
Phi=0 freq=2400MHz



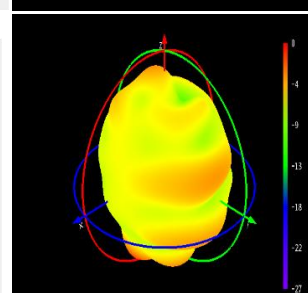
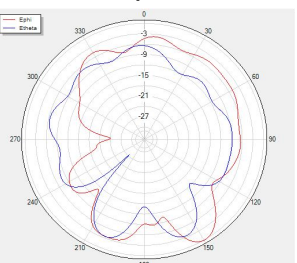
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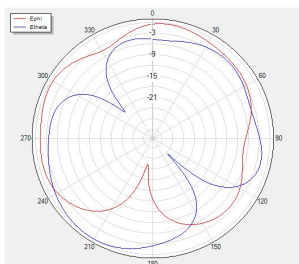
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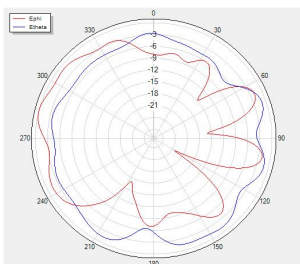
Phi=0 freq=2440MHz



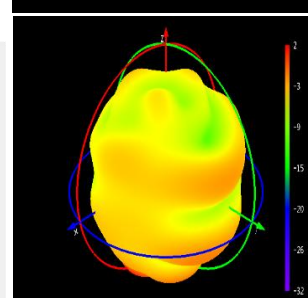
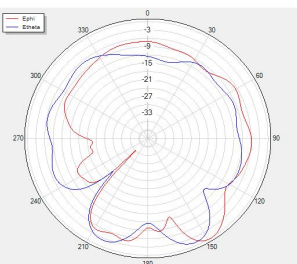
Theta=90 freq=2480MHz



Phi=90 freq=2480MHz



Phi=0 freq=2480MHz



4、 Active OTA data

R	channel	TRP (dbm)	TRP (dBm)
Free space	0	1.27	-85.36
	39	2.36	-87.7
	78	2.6	-88.12
R	channel	TRP (dbm)	TIS (dbm)
Second generation head die	0	-3.86	-80.65
	39	-4.54	-82.04
	78	-4.86	-81.16