

Part acknowledgement Part Approval Sheet

Customer name:	HANK ELECTRONICS CO., LTD HANKAI ELECTRONICS., LTD
Product Model:	A17
Risuntek P/N:	108.01.00469
Version:	A
Prodcut Name:	A17 antenna-R
Description:	A pair of semi electrolytic copper materials, adhesive backed3M9471, 2.4-2.5GHZ R
Date:	2022/9/1

(Customer Signatures)

(PM)	(ME)	(QE)

(Inner Signatures)

(QE)	(ME)	(RF)

Address: room 211-212, floor 2, Kushi science and technology innovation center, 4006 Wuhe Avenue, Longgang District, Shenzhen

Telephone: 0755-28700082

www.honant.com.cn

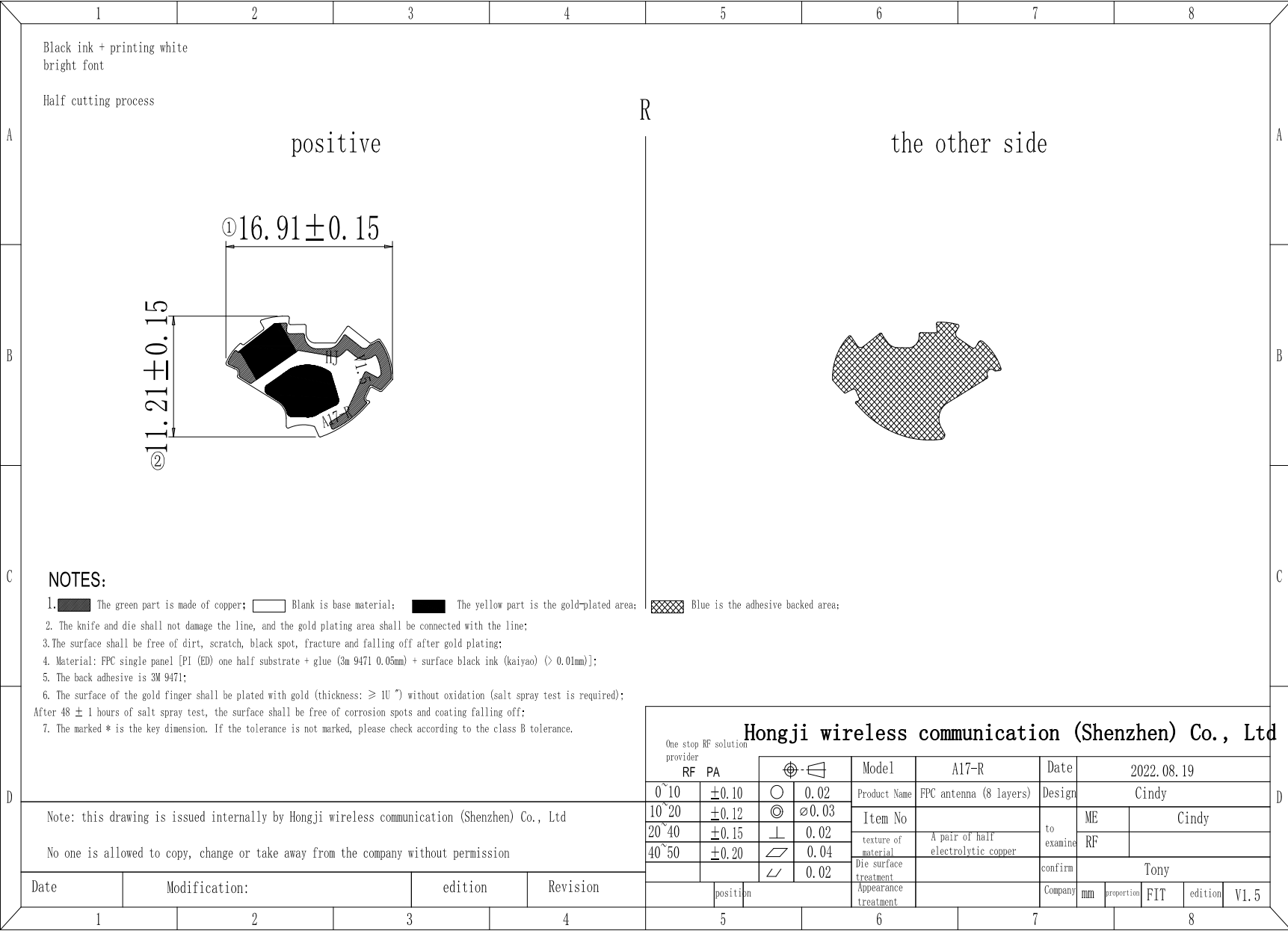
Content

- 1、 Preparation / revision of change record
- 2、 Product drawings
- 3、 Description of electrical and mechanical propertie
- 4、 Full size measurement report
- 5、 CPK Report
- 6、 Expanded list of environmental management substan
Parts
- 7、 Reliability test report
- 8、 Packaging specification

1、Preparation / revision of change record

editi on	Revision page	Change time:	Changed by:	Reason and content of change	remarks
A0	—	2022/9/1	Cindy	First issue	8-layer plate
A1					
A2					
A3					
A4					
A5					
A6					

2、Product drawings



B

C

D

NOTES:

1.  The green part is made of copper;  Blank is base material;  The yellow part is the gold-plated area;  Blue is the adhesive backed area;

2. The knife and die shall not damage the line, and the gold plating area shall be connected with the line;

3.The surface shall be free of dirt, scratch, black spot, fracture and falling off after gold plating;

4. Material: FPC single panel [PI (ED) one half substrate + glue (3M 9471 0.05mm) + surface black ink (kaiyao) (> 0.01mm)];

5. The back adhesive is 3M 9471;

6. The surface of the gold finger shall be plated with gold (thickness: ≥ 1U ") without oxidation (salt spray test is required); After 48 ± 1 hours of salt spray test, the surface shall be free of corrosion spots and coating falling off;

7. The marked * is the key dimension. If the tolerance is not marked, please check according to the class B tolerance.

One stop RF solution
provider

RF PA



Model

A17-R

Date

2022.08.19

0~10

±0.10



0.02

Product Name

FPC antenna (8 layers)

Design

Cindy

10~20

±0.12



0.03

Item No

to examine

ME

Cindy

20~40

±0.15



0.02

texture of material

A pair of half electrolytic copper

RF

40~50

±0.20



0.04

Die surface treatment

confirm

Tony



0.02

Appearance treatment

Company

mm

proportion

FIT

edition

V1.5

position

Note: this drawing is issued internally by Hongji wireless communication (Shenzhen) Co., Ltd

No one is allowed to copy, change or take away from the company without permission

Date

Modification:

edition

Revision

1

2

3

4

5

6

7

8

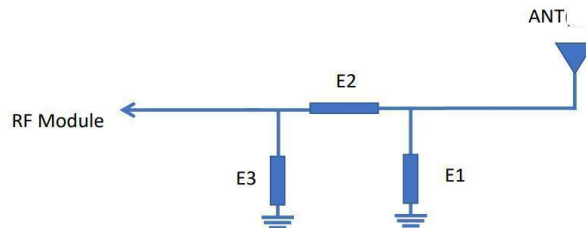
Hongji wireless communication (Shenzhen) Co., Ltd

One stop RF solution provider	RF PA		Model	A17-R	Date	2022.08.19
0~10	±0.10		0.02	Product Name	FPC antenna (8 layers)	Design Cindy
10~20	±0.12		0.03	Item No		to examine ME Cindy
20~40	±0.15		0.02	texture of material	A pair of half electrolytic copper	RF
40~50	±0.20		0.04	Die surface treatment		confirm Tony
			0.02	Appearance treatment		Company mm proportion FIT edition V1.5
	position					

Description of electrical and mechanical properties

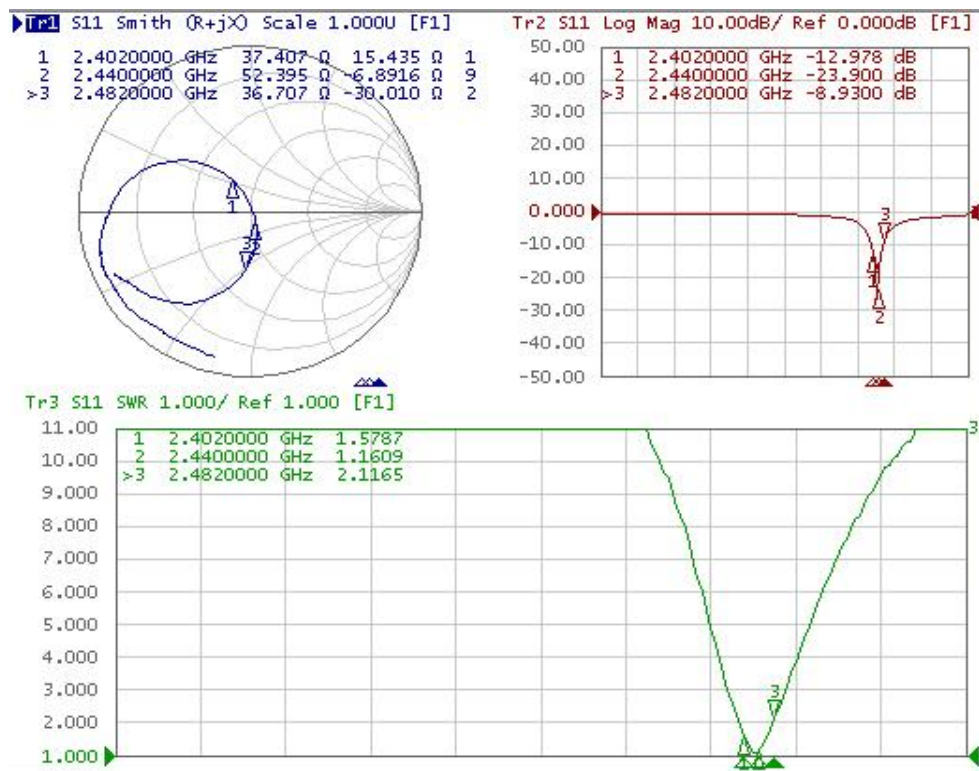
1. Matching circuit diagram

Antenna circuit matching description



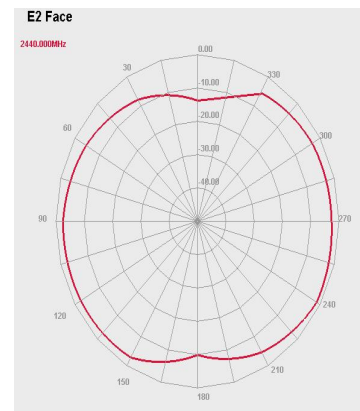
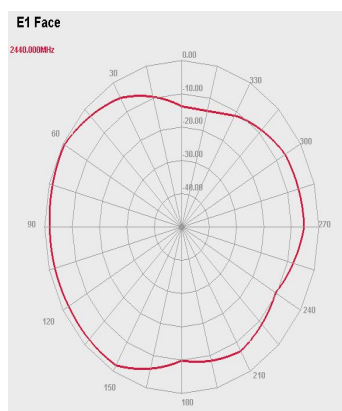
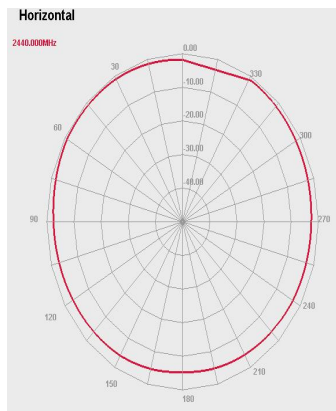
Element	Value
E1	N/C
E2	0 Ω
E3	N/C

2. S11 parameters



3、Passive efficiency

Freq[MHz]	Efficiency(%)	Gain(dBi)
	free space	free space
2400	35.4	1.4
2410	37.6	1.4
2420	38.1	1.3
2430	39.5	1
2440	40.1	1.4
2450	40.6	1.6
2460	38.9	1.8
2470	37.4	1.4
2480	37.1	1.4
2490	36.5	1.0
2500	35.9	1.3



4、Active OTA data

R	channel	TRP (dbm)	TRP (dBm)
free space	0	2.93	-88.78
	39	3.07	-89.12
	78	3.66	-90.75
R	channel	TRP (dbm)	TRP (dBm)
Head mold	0	-0.48	-84.97
	39	-0.66	-84.48
	78	-0.50	-83.86

4、Full size measurement report

[illegible]

Tabulation: Cindy	to examine:James	Date:2022/9/1
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Tabulation: Cindy	to examine:James	Date:2022/9/1
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Tabulation: Cindy	to examine:James	Date:2022/9/1
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5、CPK Report

Hongji wireless communication (Shenzhen) Co., Ltd

Project name	A17-R				Customer	HANK ELECTRONICS CO., LTD HANKAI ELECTRONICS.,LTD			
Description	antenna				Inspected	Cindy			
Material	One half electrolytic copper				Inches/MM	mm			
Revision	A				Date	2022/09/01			
Dim. Designator	16.91	11.21							
Upper Limit	17.06	11.36							
Lower Limit	16.76	11.06							
1	16.94	11.27							
2	16.95	11.25							
3	16.89	11.21							
4	16.89	11.22							
5	16.97	11.27							
6	16.91	11.22							
7	16.90	11.22							
8	16.96	11.26							
9	16.92	11.26							
10	16.90	11.23							
11	16.91	11.23							
12	16.91	11.19							
13	16.92	11.23							
14	16.91	11.27							
15	16.96	11.21							
16	16.93	11.20							
17	16.95	11.24							
18	16.96	11.20							
19	16.92	11.22							
20	16.95	11.25							
21	16.92	11.28							
22	16.95	11.26							
23	16.93	11.27							
24	16.90	11.26							
25	16.92	11.27							
26	16.97	11.28							
27	16.96	11.28							
28	16.97	11.20							
29	16.93	11.24							
30	16.91	11.27							
31	16.97	11.21							
32	16.97	11.23							
MAX.	16.97	11.28							
MIN.	16.89	11.19							
AVERAGE	16.93	11.24							
STDEV	0.03	0.03							
CP	1.89	1.73							
Cpk	1.61	1.38							
TOOLING	calipers	calipers							

Prepared by : Aston Checked by : cindy Approved by : James

6、Expanded list of environmental management substance parts

The Parts List of Enviromental Management Substances

Product Information		Supplier Contact Information	
Part name	FPC antenna	Compony Name	Hongji wireless communication (Shenzhen) Co., Ltd
Risuntek P/N	108.01.00469	Contact Name/Title	Aston
Supplier's P/N	A17-R	Date:YY/MM/DD	2022/9/1
Manufacurering site	Dongguan	E-mail address	
Total weight (g)		Tel. No.	13714345069

Report type		Confirmation results		remarks
☒	RoHS 2.0	☐		Metal provides 4 RoHS items and other 10 items
☒	HF	☐		CL & br for non-metallic parts
☒	CP65	/		Parts in contact with skin
☒	REACH	/		According to the latest SVHC list
☒	other ()	/		Such as be, pops, PFOS / PFOA, etc
☒	MSDS	☐		Article 17, seal, 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	108.01.00469	base material	Cai lungedi	SHAEC2202460504	2022. 2. 21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
2		printing ink	Youli black oil	ETR21805816	2021/9/6	ND	ND	ND	ND	ND	ND	434	ND	ND	ND	ND	ND			
3		Gummed paper	3M9471	SHAEC2118730101	2021/9/4	ND	ND	ND	ND	ND	ND	162	ND	ND	ND	ND	ND			
4		gold-plated	Get rich	A2210513116101001E / A2210513116102001E	2021/12/10	ND	ND	ND	ND	ND	ND	124	ND	ND	ND	ND	ND			
5		White ink	Chuan Yu	ETR21A04957M01	2021/10/29	ND	ND	ND	ND	ND	ND	625	ND	ND	ND	ND	ND			

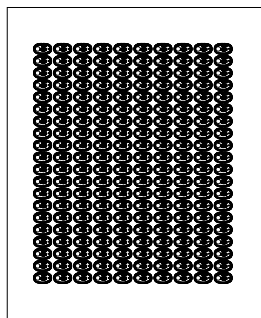
7、Reliability test report

customer		HANK ELECTRONICS CO., LTD HANKAI ELECTRONICS.,LTD		entry name	A17-R FPC antenna
Test time:		2022/08/26---2022/08/29		Number of tests	5pcs for each test item
Serial number	Test items	Test instrument	test method	Criteria:	determine
1	Salt spray experiment	Salt spray test machine	Put the tested product into a salt spray test machine containing 5% $\pm$ 1% NaCl solution for testing. The laboratory temperature is 35 ° , the pressure barrel temperature is 47 ° , the pressure is 1kgf / cm2, and the test is 48 hours. The product is required to be placed at 45 ° , after the test, take out the product, wash it and dry it for inspection	Appearance after test: the appearance is intact without obvious change. Plating: no peeling and rust. Surface spraying and screen printing: it is qualified if there is no falling off and bubble	PASS
2	Thermal Shock	Constant temperature and humidity box	Place the test product flat in the test machine and set the test conditions. The high temperature is 85 °C, and one cycle test is conducted for 24 hours; The low temperature is - 30 °C, the test is conducted for 2 cycles, and the test is started after setting. After the test, recover for 2 hours and take out the product for inspection.	There is no change in color, luster, surface appearance, hardness, scratch, crack, warping and electrical property damage Judged as qualified	PASS
Remark:					
Tabulation: Aston to examine: Cindy Approved by: Mao Luping					

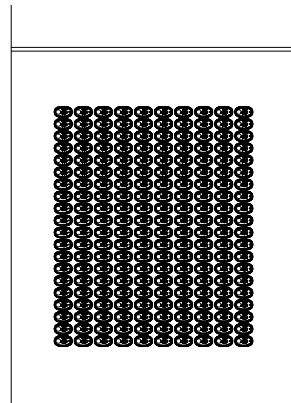
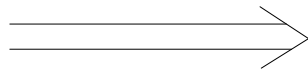
8、Packing

Item No:	108.01.00469	Product Name:	FPC antenna
Product specification:	A17-R FPC antenna	packaging:	Seal pockets and cartons
Packing quantity:	5000PCS/package	Packing method::	5000pcs / pack, 1-16 packs per box
Packing quantity:	80000PCS		

1、Small package

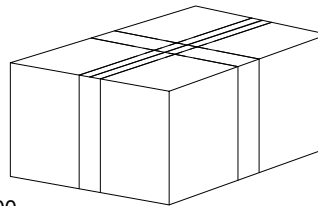
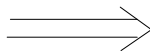
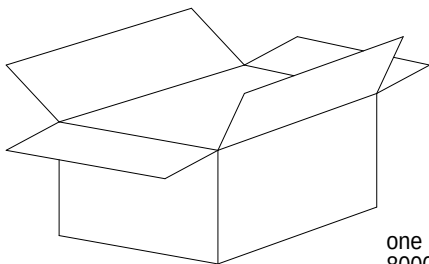


FPC antenna (full plate and half cut shipment) : 250*200



5000PCS

2、Large package



one cartone 1-8 bat(5000-80000pcs)

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: James