

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)

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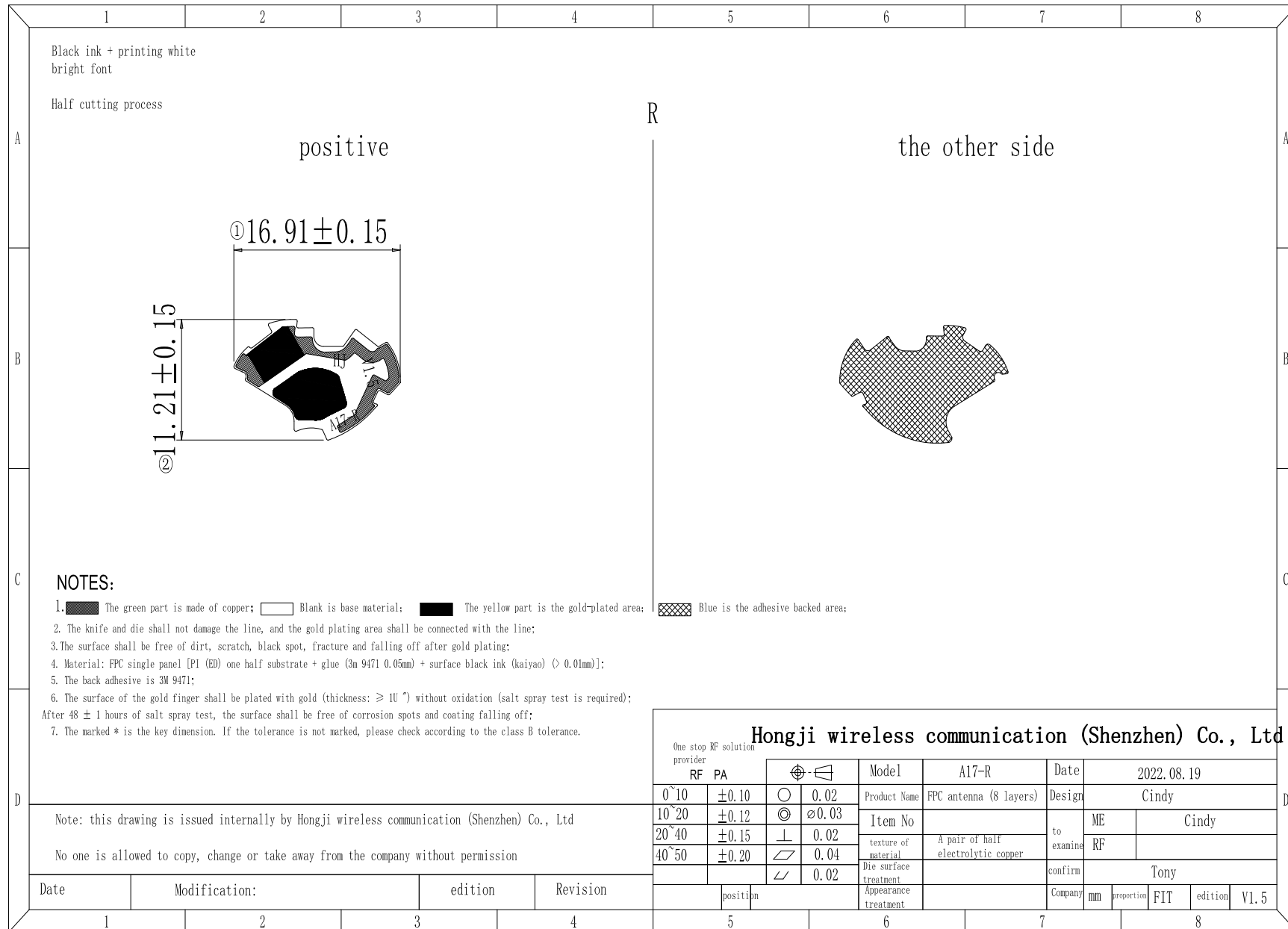
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1、Preparation / revision of change record

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					

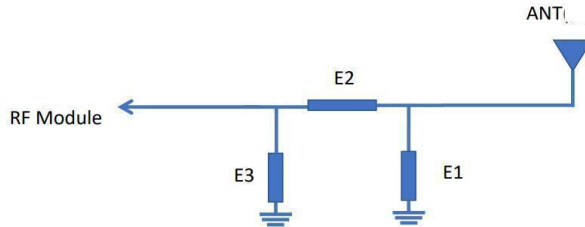
2、Product drawings



Description of electrical and mechanical properties

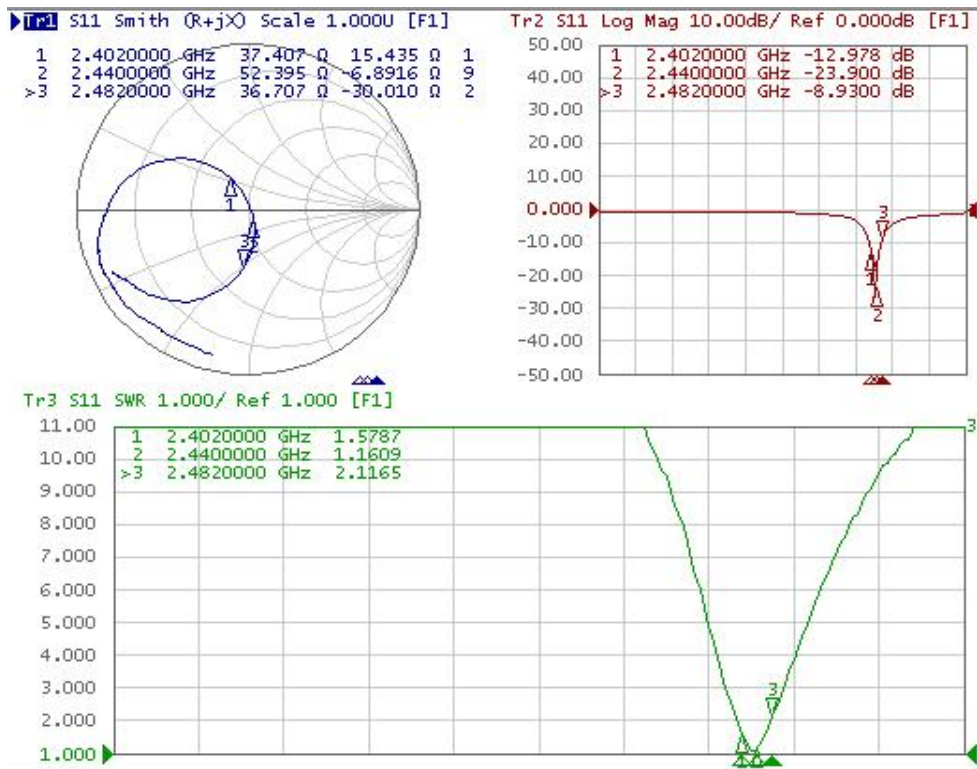
1. Matching circuit diagram

Antenna circuit matching description



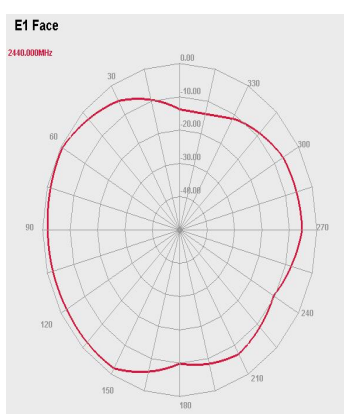
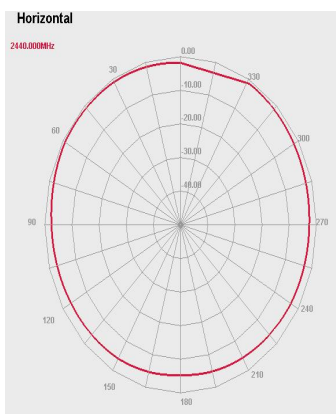
Element	Value
E1	N/C
E2	0Ω
E3	N/C

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

	code	108.01.00470		Part name		FPC antenna		Specifica tions	A17-R FPC antenna				Material Science	FPC (1 half)
	supplier	Hung Kai wireless		Measurin g tools		Two dimensional element		Unit of measureme		MM			Measurement date:	2022.09.01
NO.	Size (DIMENSIO N)	upper limit	+ TOL.	- TOL.	Lower limit	Measured 1	Measured 2	Measured 3	Measured 4	Measured 5	Measured 6	Measured 7	UPPER \cong 100%	LOWER \cong 100%
A17-R	16.91	17.06	0.15	0.15	16.76	17.000	16.860	16.960	16.880	16.950	16.970	16.981	60%	33%
	11.21	11.36	0.15	0.15	11.06	11.150	11.350	11.160	11.130	11.200	11.100	11.251	93%	73%

Tabulation: Cindy
to examine: James
Date: 2022/9/1

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
Manufacturering site	Dongguan	E-mail address	
Total weight (g)		Tel. No.	13714345069

Report type		Confirmation results		remarks
<input checked="" type="checkbox"/>	RoHS 2.0	<input type="checkbox"/>		Metal provides 4 RoHS items and other 10 items
<input checked="" type="checkbox"/>	HF	<input type="checkbox"/>		CL & br for non-metallic parts
<input checked="" type="checkbox"/>	CP65	/		Parts in contact with skin
<input checked="" type="checkbox"/>	REACH	/		According to the latest SVHC list
<input checked="" type="checkbox"/>	other ()	/		Such as be, pops, PFOS / PFOA, etc
<input checked="" type="checkbox"/>	MSDS	<input type="checkbox"/>		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	PBDE	Cl	Br	DEHP	DBP	BBP			DIBP	
1	108.01.00469	base material	Cai lungedi	SHAEC2202460504	2022. 2. 21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	电测中文ROHS (1).PDF	基材MSDS.pdf	
2		printing ink	Youli black oil	ETR21805816	2021/9/6	ND	ND	ND	ND	ND	ND	434	ND	ND	ND	ND	ND	ETR21805816 PS-800黑色油墨.PDF	PS800-SGS(油墨 黑色系列).pdf	MSDS_PS-800黑色油墨.pdf
3		Gummed paper	3M9471	SHAEC2118730101	2021/9/4	ND	ND	ND	ND	ND	ND	162	ND	ND	ND	ND	ND	2470-SGS-9471E(9472LE, 9671LE)	2470-SGS-9471E(9472LE, 9671LE)	MSDS_3M9471 白色.pdf
4		gold-plated	Get rich	A2210513116101001E / A2210513116102001E	2021/12/10	ND	ND	ND	ND	ND	ND	124	ND	ND	ND	ND	ND	电测中文ROHS.PDF	中文电测FPC镀锡金层MSDS.pdf	
5		White ink	Chuan Yu	ETR21A04957M01	2021/10/29	ND	ND	ND	ND	ND	ND	625	ND	ND	ND	ND	ND	电测中文ROHS.PDF	ETR21A04957M01 ZSR-150白色油墨.PDF	MSDS_ZSR-150 白色文字油墨.pdf

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% ± 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

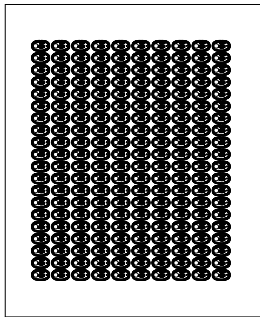
to examine: Cindy

Approved by: Mao Luping

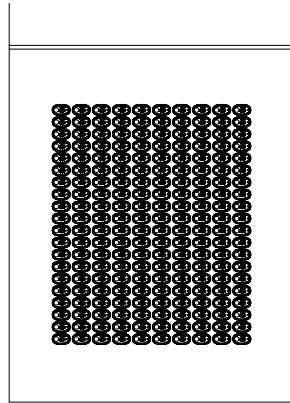
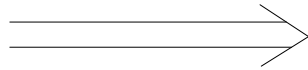
8、 Packing

Item No:	108.01.00469	Product Name:	FPC antenna
Product specificati	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

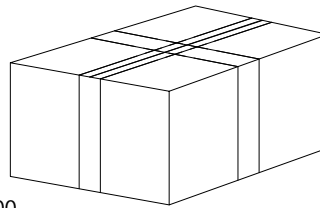
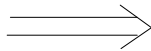
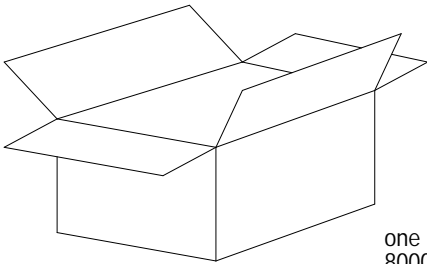


FPC antenna (full plate and half cut shipment) : 250*200



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 $-10\text{ }^{\circ}\text{C} \sim +24\text{ }^{\circ}\text{C}$, 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