

Star Chi technology sample acknowledgement book

Supplier name: Shenzhen Yingjiachuang Electronic Technology Co., LTD

Product name :2.4G/5G black FPC built-in antenna

Material number:

Material Description:L220_WF_M_V01_antenna

Edition of the admission book: A0 edition

Drawing version number (no need to fill in if no drawing is available): A0

Supplier recognition field (Stamp is required here, and each acknowledgement is sealed with a seal)		
R&d/Engineering	Quality	Give permission to
Yin Feijie	Yang Yungang	Chauhan

Shenzhen star Chi technology recognition column		
Design department	Research and development	Quality management department

Supplier Address: C Building, Hongyu Guangming Valley, No. 11, Shiwei Community, Ma Tian Ban, Guangming District, Shenzhen Tel: +86-755-27810060/23192199 Fax: +86-0755-27810057



Shenzhen Yingjia Chuang electronic technology Co., LTD

<http://www.szsyjc.com>

APPROVAL SHEET

CUSTOMER NAME		
CUSTOMER P/N		
PART NAME	2. 4G/5G black FPC internal antenna 1.13 Black line L=110mm(Applicable model: L220)	
P/ N	YJC-6N110-B70	
APPROVAL REV.	A0	
DELIVERY DATE	August 28, 2024	
PREPARED BY	Yin Feijie	
CHECKED BY	Fang Wenfeng	
APPROVED BY	Chauhan	
Customer Approved		
Prepared By	Checked By	Approved By

Address: Building C, Hongyu Guangming Valley, No. 11, Youma Gang Road, Ma Tian Street, Guangming District, Shenzhen
Dongguan Branch: Yingjiachuang Industrial Park, No. 2 Yinhe 3rd Road, Shishuikou, Qiaotou Town, Dongguan
City Hangzhou Office: 212, Building B, Dahua Jianghong International Innovation Park, 369 Internet of Things Street, Binjiang District, Hangzhou
Mianyang Office: No. 4F-34 Wanxiang High-tech International, No. 35 Mianxing East Road, Mianyang High-tech Zone, Sichuan

Province telephone: 0755-27810060 fax: 0755-27810057 website: <http://www.szsyjc.com>



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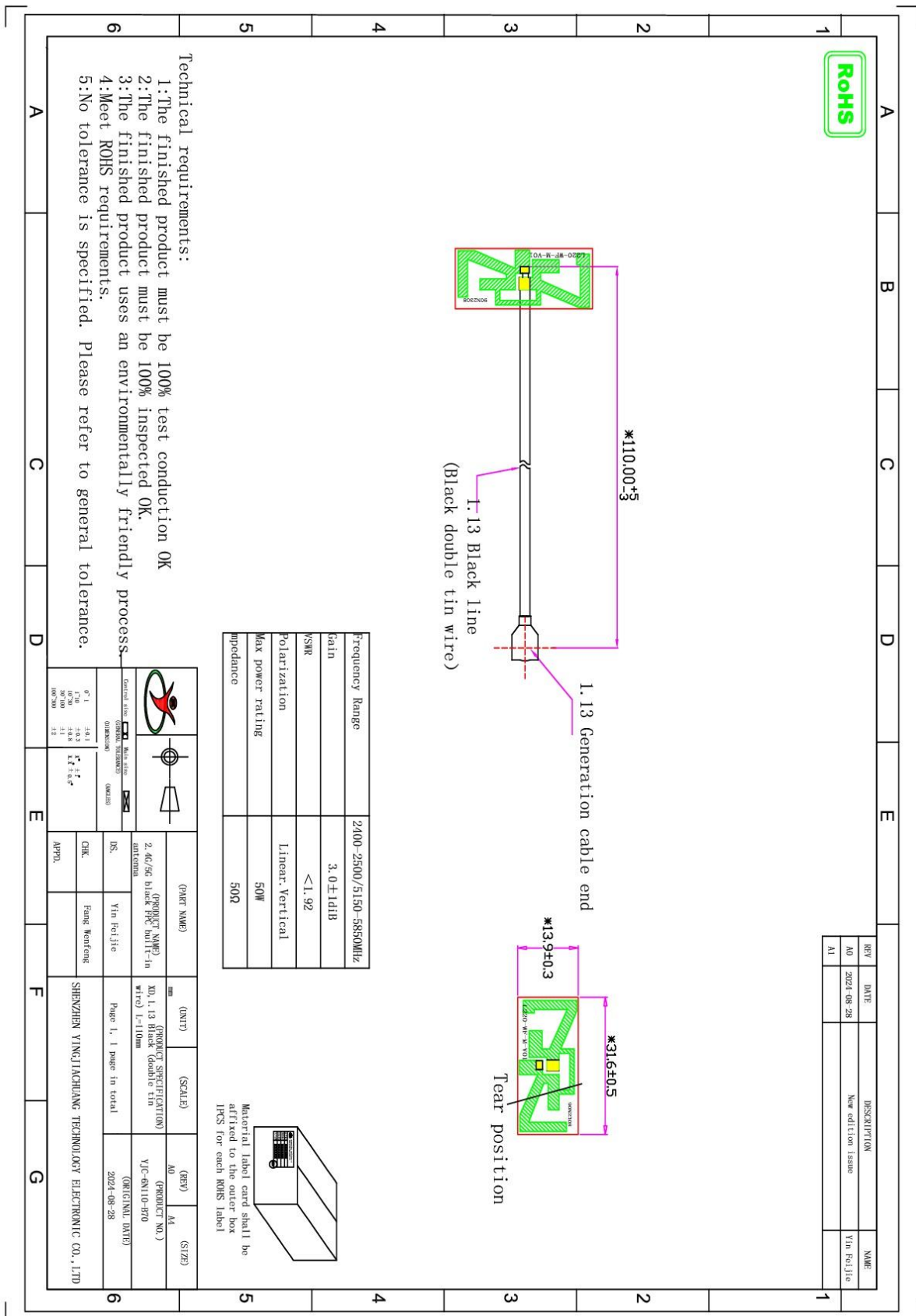


Resume:

Version	Changes and reasons	date	publish
A/0	Issued	August 28, 2024	



Antenna plan:



**Antenna technical parameters and environmental testing:**

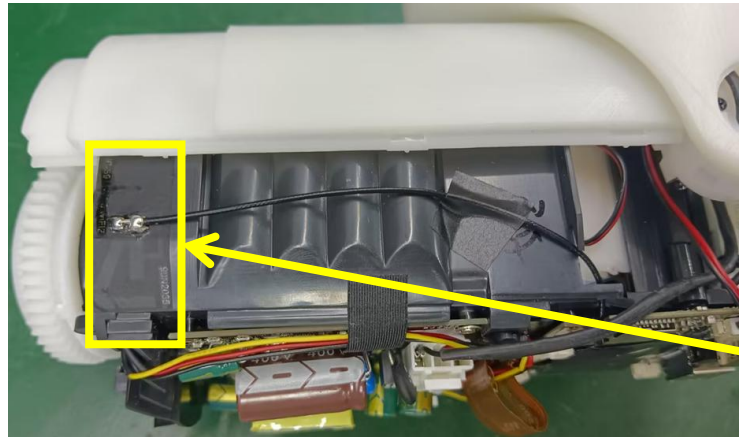
Electrical technical parameter			
Electrical Specifications		Mechanical Specifications	
Frequency Range	2400-2500/5150-5850MHz	Cable Color	Black
VSWR	<1.92	Input connector	XD
Input Impedance	50 Ω	Cable length	110mm
Direction	All	Working Temperature	-20℃~+70℃
Gain	3.0±1dBi	Working Humidity	20%~80%

Environmental performance test:

Project	Test condition	Standard
Storage Conditions	In the absence of specified test temperature, humidity, air pressure is as follows:: 1. Temperature is - 30 ℃ ~ + 80 ℃ 2. Relative humidity of 45% to 45% 3. Air pressure is 86 kpa to 106 kpa	Electrical and mechanical performace is normal
High and low temperature test	Between 70 ℃ and -20 ℃ for 5 loops, then 1-2 h under normal conditions, check the appearance quality.	Size should meet the requirements and meet the performance of mechniry and electric.
Constant damp and hot resistance test	95 + / - 3% relative humidity, temperature test: 40 ℃. Lasts 2 h after, try to take out the determination of electrical properties, within 5 min after try 1-2 h under article normal thing, check the appearance quality	Size should meet the requirements and meet the performance of mechniry and electric.
vibration test	10-55 hz, vibration frequency range of displacement amplitude: 0.35 MM, acceleration amplitude: 50.0 M/S, sweep cycles: 30 times	Electrical and mechanical performace is normal
Fall down test	1 m high altitude in accordance with the perpendicular axis free drop 3 times	Electrical and mechanical performace is normal



Antenna physical diagram and attached location diagram:



Antenna attachment position

Antenna performance test diagram:



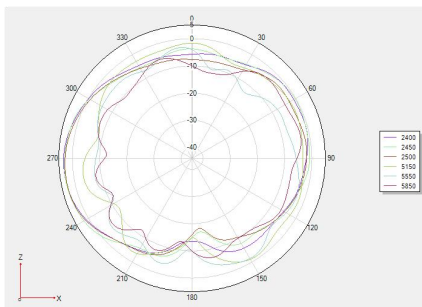
frequency (MHZ)	2400	2450	2500	5150	5725	5850
Standing-wave ratio	1.36	1.39	1.49	1.82	1.35	1.39



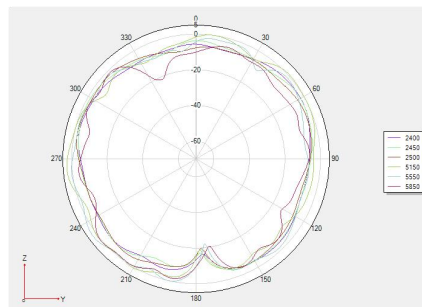
2D.3D Test Data (2.4G-5G):

Frequency	Efficiency (%)	Gain. (dBi)
2400MHz	57.55	3.41
2410MHz	56.55	3.39
2420MHz	54.82	3.39
2430MHz	54.52	3.28
2440MHz	58.55	4.09
2450MHz	56.22	3.38
2460MHz	57.30	3.22
2470MHz	57.92	3.33
2480MHz	57.61	3.48
2490MHz	50.07	2.91
2500MHz	52.95	3.01
5150MHz	59.11	3.17
5250MHz	55.40	3.25
5350MHz	54.28	3.31
5450MHz	56.11	5.43
5550MHz	60.98	3.47
5650MHz	56.36	3.26
5750MHz	55.88	3.18
5850MHz	54.51	3.05

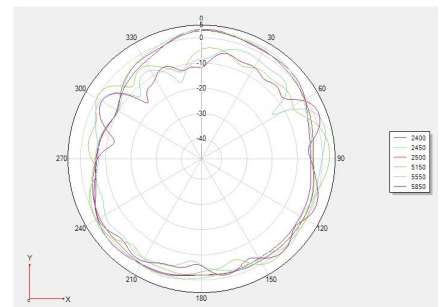
Phi 0 2D



Phi 90 2D

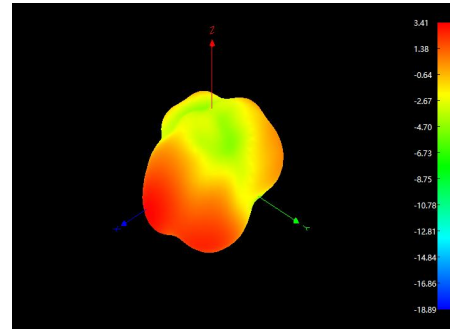
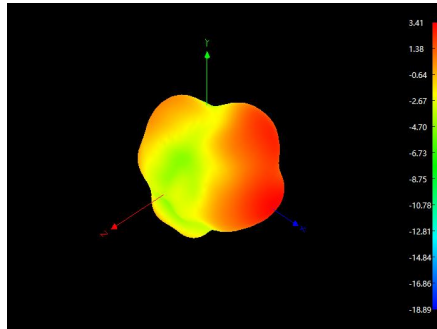
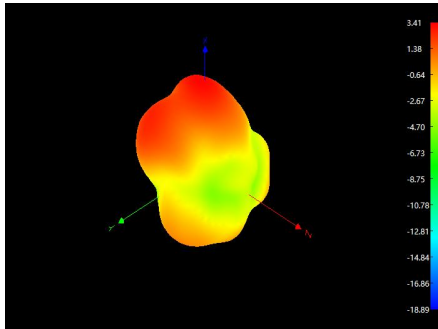


Theta 90 2D

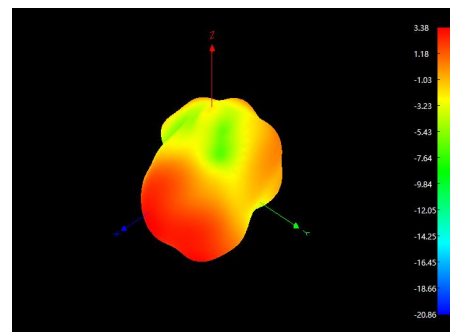
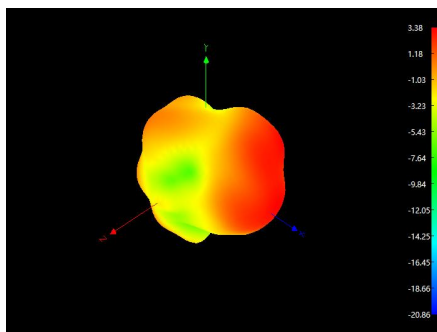
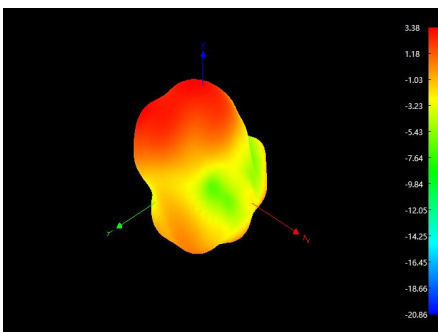




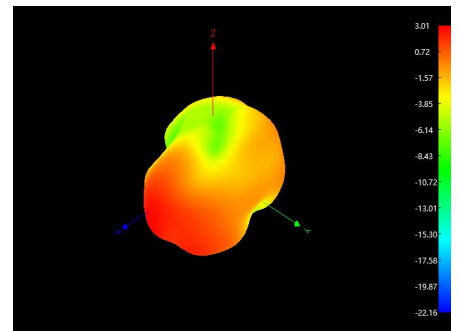
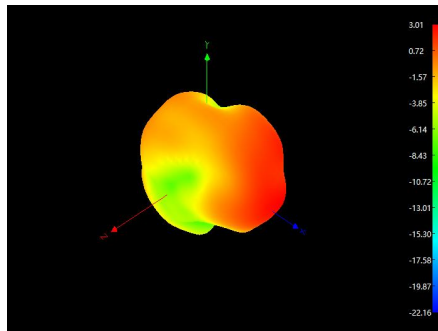
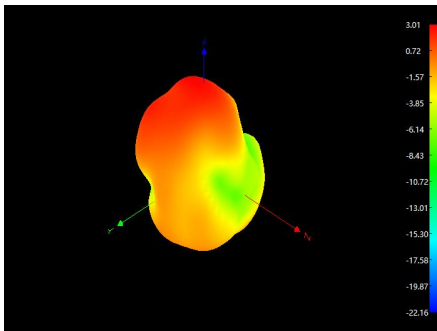
3D 2400:



3D 2450:

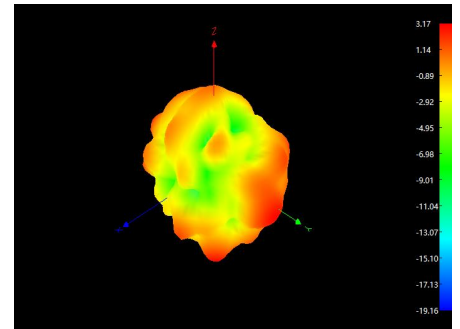
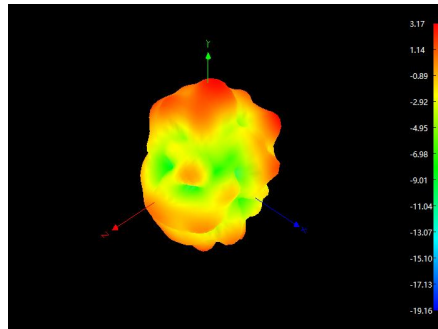
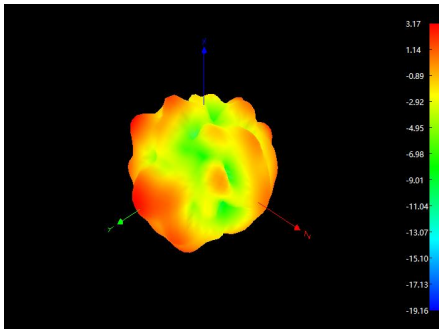


3D 2500:

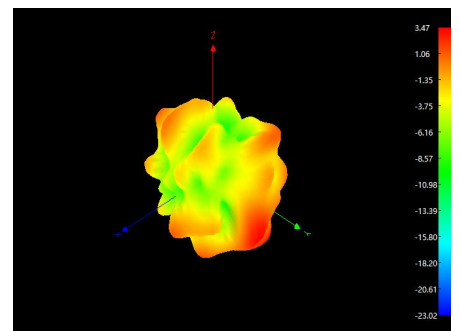
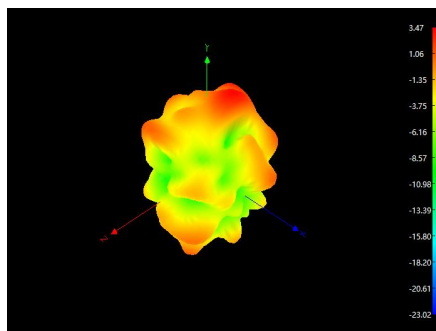
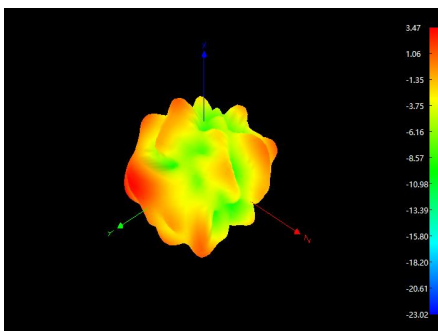




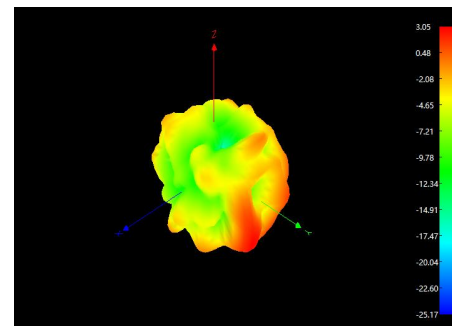
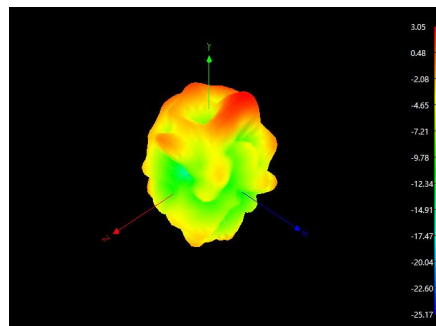
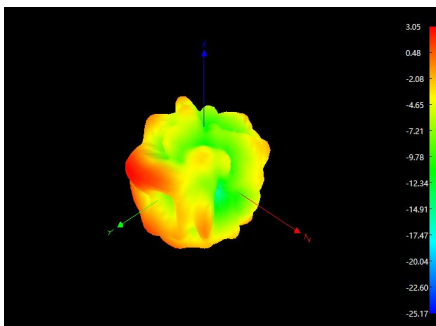
3D 5150:



3D 5550:



3D 5850:





OTA active test data statistics:

Item	Measurement	Band	Channel	Frequency	Total
1	TRP	WIFI_B (11M)	1	2412	17.56
2	TRP	WIFI_B (11M)	6	2437	17.25
3	TRP	WIFI_B (11M)	11	2462	17.19
4	TIS(EIRP)	WIFI_B (11M)	1	2412	-83.05
5	TIS(EIRP)	WIFI_B (11M)	6	2437	-83.22
6	TIS(EIRP)	WIFI_B (11M)	11	2462	-81.98
7	TRP	WIFI_G (54M)	1	2412	15.94
8	TRP	WIFI_G (54M)	6	2437	15.4
9	TRP	WIFI_G (54M)	11	2462	15.37
10	TIS(EIRP)	WIFI_G (54M)	1	2412	-70.12
11	TIS(EIRP)	WIFI_G (54M)	6	2437	-70.89
12	TIS(EIRP)	WIFI_G (54M)	11	2462	-69.67
13	TRP	WIFI_N_ISM (65M)	1	2412	17.15
14	TRP	WIFI_N_ISM (65M)	6	2437	17.11
15	TRP	WIFI_N_ISM (65M)	11	2462	17.29
16	TIS(EIRP)	WIFI_N_ISM (65M)	1	2412	-66.81
17	TIS(EIRP)	WIFI_N_ISM (65M)	6	2437	-68.05
18	TIS(EIRP)	WIFI_N_ISM (65M)	11	2462	-66.84
19	TRP	WIFI_A (54M)	36	5180	17.62
20	TRP	WIFI_A (54M)	149	5745	18.7
21	TRP	WIFI_A (54M)	165	5825	18.92
22	TIS(EIRP)	WIFI_A (54M)	36	5180	-72.39
23	TIS(EIRP)	WIFI_A (54M)	149	5745	-72.17
24	TIS(EIRP)	WIFI_A (54M)	165	5825	-73.33
25	TRP	WIFI_AX_ISM (135M)	1	2412	17.26
26	TRP	WIFI_AX_ISM (135M)	6	2437	17.2
27	TRP	WIFI_AX_ISM (135M)	11	2462	17.51
28	TIS(EIRP)	WIFI_AX_ISM (135M)	1	2412	-57.64
29	TIS(EIRP)	WIFI_AX_ISM (135M)	6	2437	-58.22
30	TIS(EIRP)	WIFI_AX_ISM (135M)	11	2462	-57.56
31	TRP	WIFI_AX_UNII (135M)	36	5180	18.33
32	TRP	WIFI_AX_UNII (135M)	149	5745	18.62
33	TRP	WIFI_AX_UNII (135M)	165	5825	18.58
34	TIS(EIRP)	WIFI_AX_UNII (135M)	36	5180	-69.1
35	TIS(EIRP)	WIFI_AX_UNII (135M)	149	5745	-68.53
36	TIS(EIRP)	WIFI_AX_UNII (135M)	165	5825	-69.12



Throughput test data:

category							category						
frequency	bandwidth	Attenuation value	channel	direction	TX	RX	frequency	bandwidth	Attenuation value	channel	direction	TX	RX
2. 4G	40	20	1	0	139. 6	133. 44	5G	80	20	40	0	186. 73	176. 26
				90	136. 29	134. 25					90	188. 87	173. 44
				180	139. 12	134. 19					180	186. 93	172. 34
				270	139. 46	134. 83					270	188. 83	179. 56
category							category						
frequency	bandwidth	Attenuation value	channel	direction	TX	RX	frequency	bandwidth	Attenuation value	channel	direction	TX	RX
2. 4G	40	20	8	0	136. 33	133. 22	5G	80	20	149	0	187. 36	186. 86
				90	138. 69	133. 08					90	188. 71	190. 84
				180	135. 34	129. 12					180	188. 52	187. 39
				270	133. 79	133. 37					270	187. 86	186. 07
category							category						
frequency	bandwidth	Attenuation value	channel	direction	TX	RX	frequency	bandwidth	Attenuation value	channel	direction	TX	RX
2. 4G	40	20	11	0	137. 71	128. 16	5G	80	20	157	0	188. 78	173. 12
				90	132. 45	131. 24					90	188. 62	177. 91
				180	134. 53	130. 9					180	187. 57	174. 1
				270	136. 36	126. 43					270	187. 49	179. 26



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Process flow chart:

Cut cables or cut terminals weld $\longrightarrow$ test $\longrightarrow$ QC $\longrightarrow$ package

BOM list:

FPC Wire rod terminal PE packing bag Paper box

Outgoing inspection report

Customer name		Starlight		Model number		L220		Inspection procedure	
Product name		FPC built-in antenna		Product number				Inspection method	
Date of submission		2024.08.28		Quantity for inspection		5 PCS		Date of inspection	
check check pass cheng	Inspection content		criterion				Inspection mode		Control frequency
	appearance		Test result For the same parts, the outer surface of the product is smooth and flat, and no obvious bubbles, wrinkles, cracks, burrs, flash edges, pinholes, dents, scratches and other defects affecting the appearance are allowed (or refer to the sample).				visual		100%
	colour		The sample was examined and no color bias was observed. (30cm distance, 90 ° ~ 45 ° rotation, 600lux illumination)				visual		100%
	Key dimension		As follows				determine		5pcs/batch
Key dimension measurement	dimension	Standard size (mm)	N1	N2	N3	N4	N5	determine	
	1	31.6 (±0.5)	31.69	31.72	31.75	31.70	31.78	OK	
	2	13.9 (±0.3)	13.98	14.03	14.05	14.08	14.02	OK	
	3	110 (+5/-3)	112.00	111.00	111.00	111.80	112.50	OK	
	4								
5									
Failure description:									
Test results determine: ☒ Up to standard ☐ Below standard									
Inspector: Zhu Pan					Approved by: Feng Yingmei				



ROHS 声明

尊敬的顾客:

我司身为江西星驰电子科技有限公司的供应商,我们在这里保证:我司供货给贵司的产品符合下列欧盟指令ROHS的要求,一旦经第三方机构检测出我司所提供的物质超出欧盟指令ROHS要求之标准值,因此而造成的一切损失均由我司承担,特此声明:

一. 中文

1. 铅 (Pb)	0.1%(最大含量1000PPM)
2. 汞 (Hg)	0.1%(最大含量1000PPM)
3. 镉 (Cd)	0.01%(最大含量100PPM)
4. 六价的铬	0.1%(最大含量1000PPM)
5. 多溴联苯 (PBB)	0.1%(最大含量1000PPM)
6. 多溴联苯醚 (PBDE)	0.1%(最大含量1000PPM)

二. 英文

1. Lead-Pb (铅)	0.1% (Proposed Maximum concentration)
2. Mercury-Hg	0.1%(Proposed Maximum concentration)
3. Cadmium-Cd	0.01%(Proposed Maximum concentration)
4. Hexavalent Chromium Cr(VI)	0.1%(Proposed Maximum concentration)
5. Polybrominated biphenyls-PBB	0.1%(Proposed Maximum concentration)
6. Polybrominated diphenyl ethers-pbde	0.1%(Proposed Maximum concentration)

公司名称: 深圳市英佳创电子科技有限公司

法人代表签名/公司盖章

总经理: 陈英

日期: 2023-4-27





深圳市英佳创电子科技有限公司

<http://www.szsyjc.com>

Material RoHS conformity declaration form

This is to certify that the delivery to your company's components, raw materials, auxiliary materials used and the additives in the production engineering are accord with RoHS environmental requirements of the restrictions on the use of hazardous substances directive (RoHS directive 2011/65 / EU)

About components used raw materials, packaging materials, auxiliary materials and additives used in the production process such as composition of the report is as follows:

Component /Part Name	Material Composition	ICP report #	Test Org.	Test Date	Content of harmful substances (ppm)						PASS?
					Cd	Pb	Hg	Cr ⁶⁺	PBB	PBDE	PASS
Wire rod	Coaxial cable	CANEC24002746206	SGS	24/02/23	ND	ND	ND	ND	ND	ND	PASS
terminal	Phosphor bronze	CANEC24000977302	SGS	24/01/22	ND	6	ND	ND	ND	ND	PASS
	Gold coating	A2240410234101001E	CTI	24/07/16	ND	ND	ND	ND	ND	ND	PASS
	Rubber core	A2240126395101003E	CTI	24/03/16	ND	ND	ND	ND	ND	ND	PASS
Eco-friendly tin wire	Eco-friend ly tin wire	SHAEC24006459102	SGS	24/04/10	ND	78	ND	ND	ND	ND	PASS
FPC	Printing ink	ETR23A00862M01	SGS	23/10/13	ND	4.86	ND	ND	ND	ND	PASS
	3M9471LE	SHAEC23021627701	SGS	23/12/27	ND	ND	ND	ND	ND	ND	PASS
	Copper foil	A2240082746101006E	CTI	24/03/01	ND	ND	ND	ND	ND	ND	PASS