



Shenzhen Yingjiachuang Electronic Technology Co., LTD
<http://www.szsyjc.com>

Sample Acceptance Certificate

Technical power material number: 3.014.001.0026

Product name: Black FPC with built-in antenna

Specification/Model: 2.4G black FPC built-in antenna (total length) L = 90MM

Project Name: Compact camera

Vendor: Shenzhen Yingjiachuang Electronic Technology Co., LTD

REV: V2.0

DATE: November 15th, 2025

APPROVED BY VENDOR			
Produce	Audit	Approval	Signature and seal
Yin Feijie	Fang Wenfeng	Xiao Han	
APPROVED BY CUSTOMER			
purchasing	Research and development	mass	Signature and seal



Shenzhen Yingjiachuang Electronic Technology Co., LTD

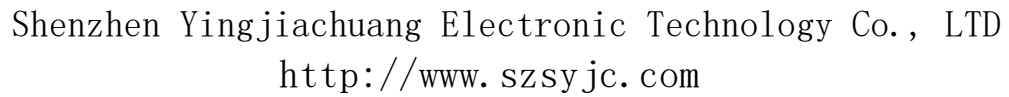
<http://www.szsyjc.com>

APPROVAL SHEET

CUSTOMER NAME	Ji Wei	
CUSTOMER P/N	3.014.001.0026	
PART NAME	2.4G black FPC built-in antenna (total length) L = 90MM	
P/ N	YJC-6N090-B105	
APPROVAL REV.	V2.0	
DELIVERY DATE	November 15th, 2025	
PREPARED BY	Yin Feijie	
CHECKED BY	Fang Wenfeng	
APPROVED BY	Xiao Han	
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>



1、	Cover。		1
2、	Table of Contents。		2
3、	Curriculum Vitae。		3
4、	Antenna plan view。		4
5、	Antenna technical parameters and environmental performance testing。		5
6、	Antenna physical diagram and attachment position diagram。		6
7、	Antenna performance test chart。		6
8、	Reference coordinate system。		7
9、	2D.3D (2.4G) Test Data。		8-9
10、	OTA active test data。		10
11、	Reliability Test Report。		11-12
12、	QC engineering drawing。		13-15
13、	CPK。		16-17
14、	BOM Material Certificate。		18
15、	Sample Inspection Report。		19
16、	FAI Test Report。		20
17、	Packaging and Shipping Methods。		21
18、	Environmental Report List。		22-23

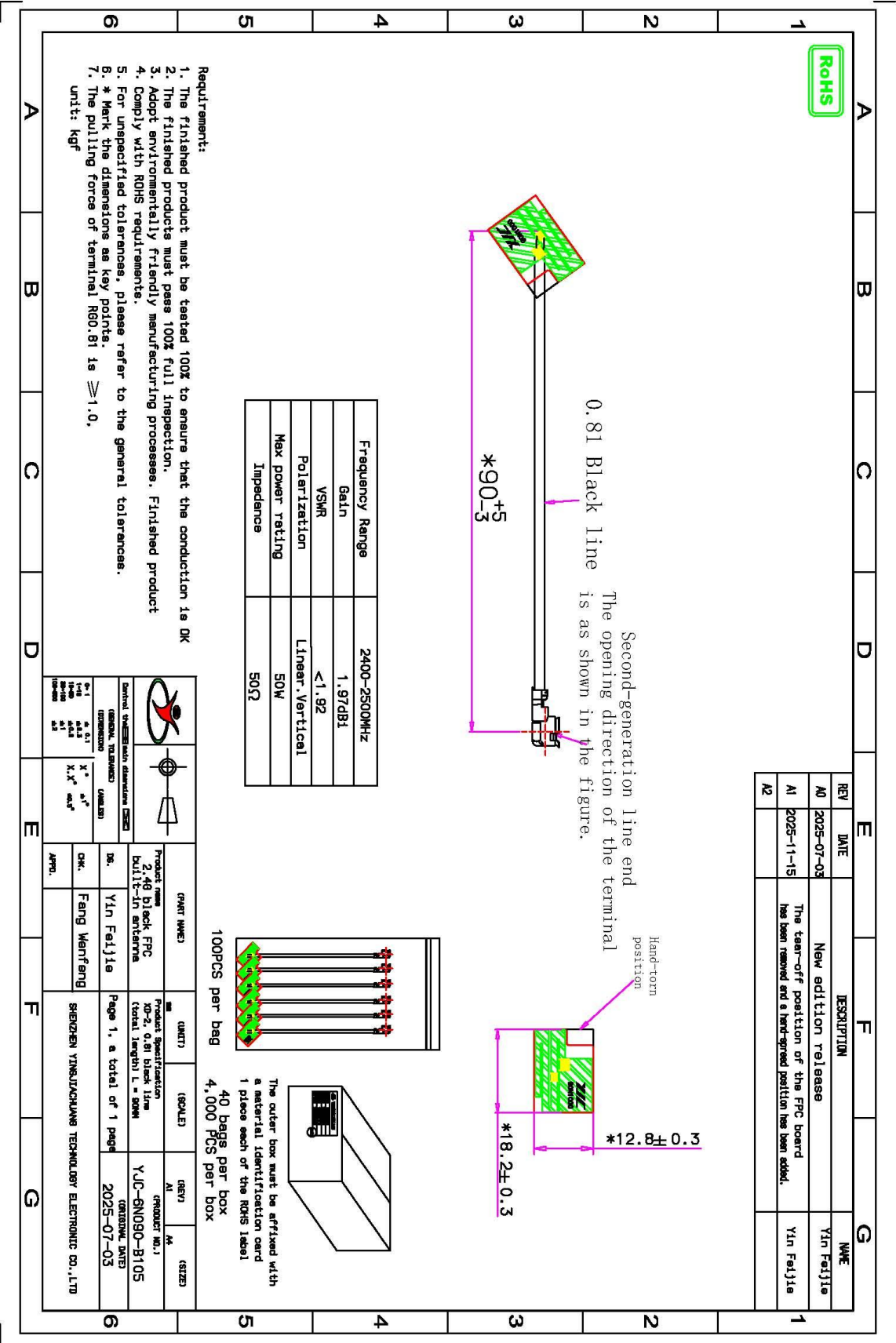


Curriculum Vitae:

Version	Change content and reasons for the change	Date	Issue
V1.0	First edition release	October 29th, 2025	
V2.0	The tear-off position of the FPC board has been removed and a hand-spread position has been added.	November 15th, 2025	



Antenna floor plan:





Antenna technical parameters and environmental testing:

Electrical technical parameter			
Electrical Specifications		Mechanical Specifications	
Frequency Range	2400-2500MHz	Antenna Color	Black
VSWR	<1.92	Input connector	XD-2
Input Impedance	50 Ω	Cable length	90mm
Direction	All	Working Temperature	-30°C~+70°C
Gain	1.97dBi	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 °C ~ + 70 °C 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 °C and -30 °C for 5 loops, then 1-2 h under normal conditions, check the appearance quality.	Size should meet the requirements and meet the performance of mechnery and electric.
Constant damp and hot resistance test	95 + / - 3% relative humidity, temperature test: 40 °C. 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 mechnery 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

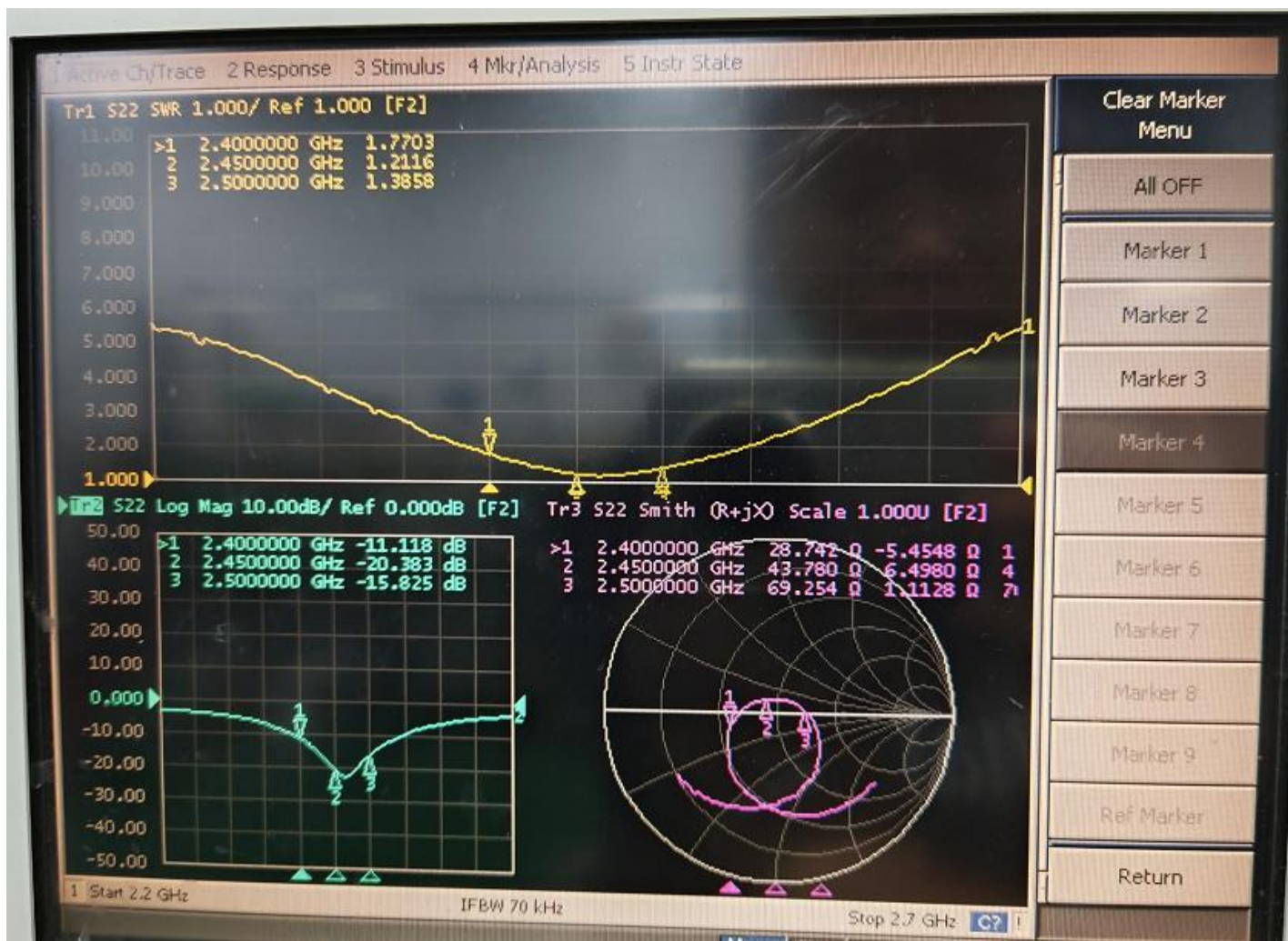


Physical picture of the antenna:



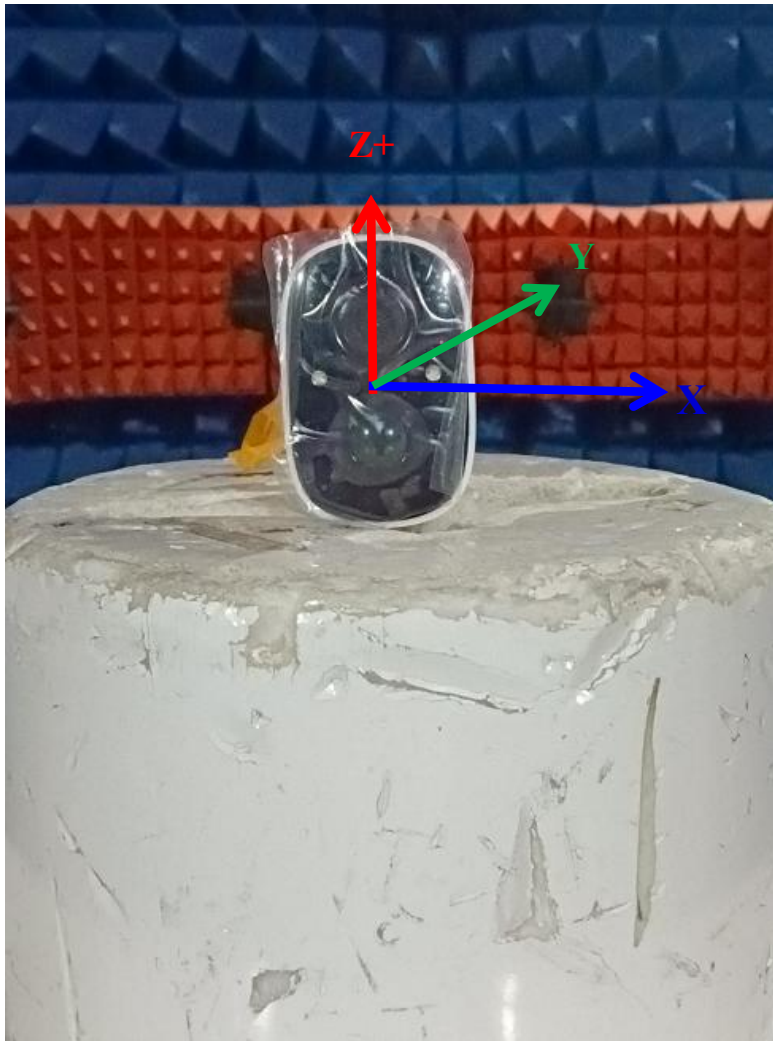
Antenna attachment position

Antenna performance test diagram:





Reference coordinate system:



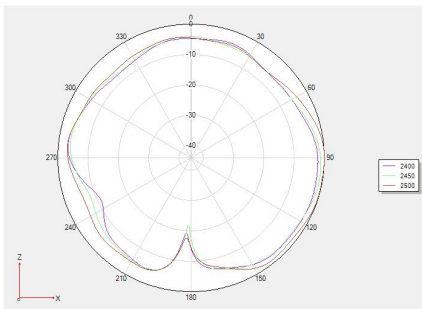
	XY	XZ	YZ
0°	Right	Up	Up
90°	Front	Right	Front
180°	Left	Down	Down
270°	Back	Left	Back



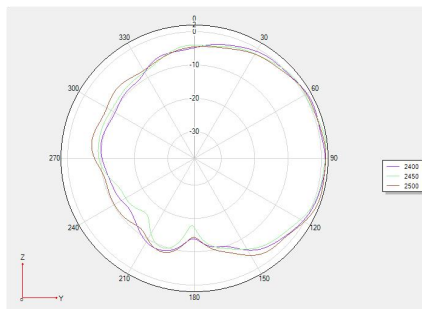
2D. 3D test data: (2.4G)

Frequency	Efficiency (%)	Gain. (dBi)
2400MHz	40.89	1.24
2410MHz	43.82	1.45
2420MHz	44.36	1.85
2430MHz	42.76	1.47
2440MHz	46.59	1.84
2450MHz	44.26	1.53
2460MHz	46.88	1.73
2470MHz	43.55	1.06
2480MHz	47.46	1.97
2490MHz	43.11	0.9
2500MHz	45.36	1.4

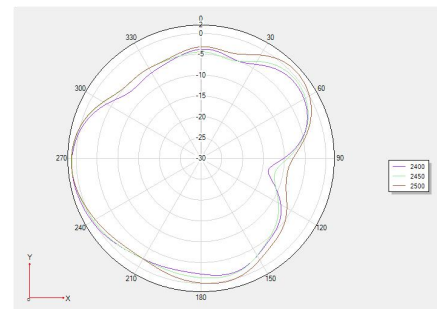
Phi 0 2D



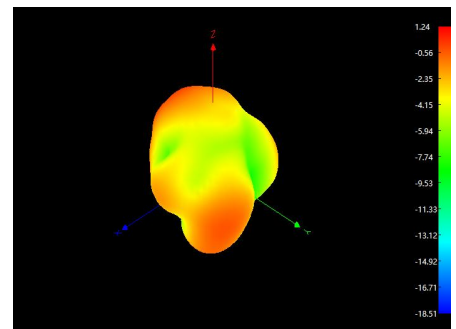
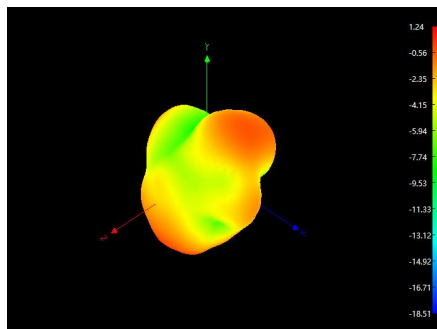
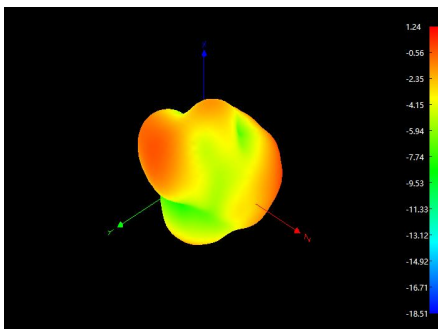
Phi 90 2D



Theta 90 2D

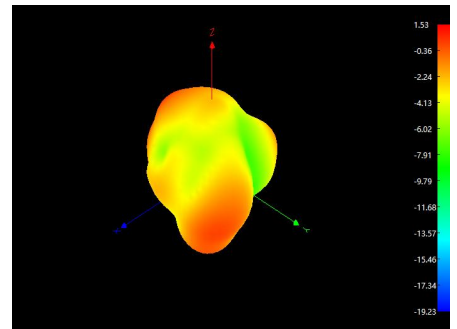
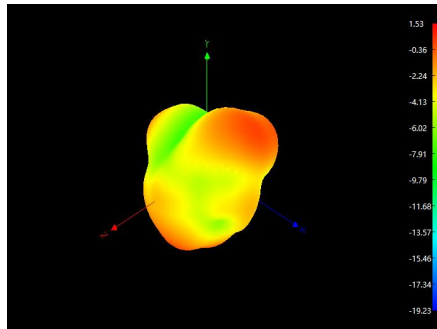
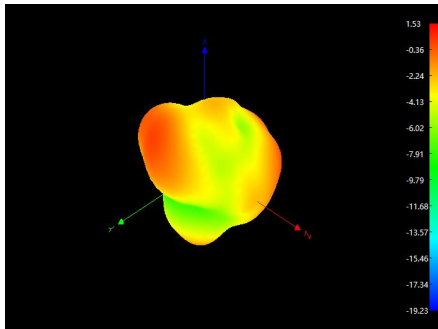


3D 2400

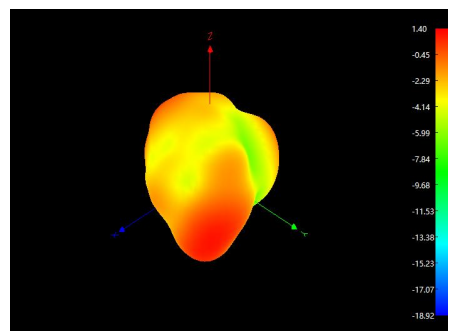
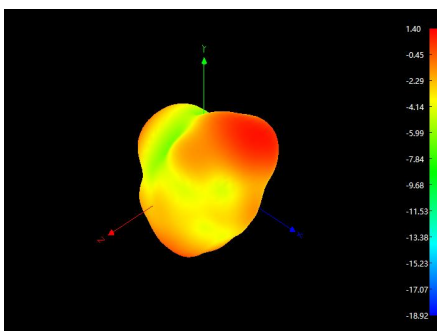
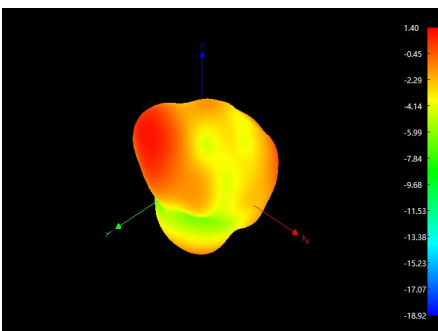




3D 2450



3D 2500





OTA Active Test Data Statistics:

Item	Measurement	Band	Channel	Frequency	Total(1)	Total(2)	Total(3)
1	TRP	WIFI_B (1M)	1	2412	14.58	16.79	15.94
2	TRP	WIFI_B (1M)	6	2437	15.73	16.56	15.85
3	TRP	WIFI_B (1M)	11	2462	15.52	15.54	15.62
4	TIS(EIRP)	WIFI_B (11M)	1	2412	-85.74	-84.88	-85.03
5	TIS(EIRP)	WIFI_B (11M)	6	2437	-85.82	-85.16	-84.32
6	TIS(EIRP)	WIFI_B (11M)	11	2462	-81.82	-82.66	-82.14
7	TRP	WIFI_G (6M)	1	2412	14.61	15.55	14.57
8	TRP	WIFI_G (6M)	6	2437	15.02	15.79	15.66
9	TRP	WIFI_G (6M)	11	2462	14.61	15.61	14.78
10	TIS(EIRP)	WIFI_G (54M)	1	2412	-74.78	-74.01	-74.35
11	TIS(EIRP)	WIFI_G (54M)	6	2437	-73.01	-72.29	-72.58
12	TIS(EIRP)	WIFI_G (54M)	11	2462	-72.48	-72.31	-72.69
13	TRP	WIFI_N_ISM (6.5M)	1	2412	13.71	14.44	13.98
14	TRP	WIFI_N_ISM (6.5M)	6	2437	13.78	14.88	13.84
15	TRP	WIFI_N_ISM (6.5M)	11	2462	13.1	14.24	13.69
16	TIS(EIRP)	WIFI_N_ISM (65M)	1	2412	-70.72	-70.26	-70.2
17	TIS(EIRP)	WIFI_N_ISM (65M)	6	2437	-69.11	-68.15	-68.56
18	TIS(EIRP)	WIFI_N_ISM (65M)	11	2462	-68.31	-68.74	-68.32



Shenzhen Yingjiachuang Electronic Technology Co., LTD

Reliability Test Report

Serial number	Test type	Test conditions and methods	Sample quantity	Test result
1	High and low temperature storage	At 1.70℃ for 48 hours, after the test is completed, it should be placed at room temperature for 2 hours before the appearance inspection. 2. At -30℃ for 48 hours, after the test, place at room temperature for 2 hours before conducting the appearance inspection.	5pcs	Pass
2	Thermal shock	Place at $-30\pm 3^{\circ}\text{C}$ for 1 hour, then switch to $60\pm 3^{\circ}\text{C}/95\%\text{RH}$ within 1 minute and maintain for 1 hour. Cycle 24 times. 2. After the test is completed, let it stand at room temperature for 2 hours before conducting the appearance inspection.	5pcs	Pass
3	Resistant to hand sweat	After soaking the sample in slightly acidic hand sweat with a PH value of 4.7 for 24 hours, there was no corrosion or oxidation	2pcs	Pass
4	"Bai Ge"	Adhesive tape with an adhesion force of 350 g/cm^2 to 400 g/cm^2 (3M 610 grade adhesive tape or equivalent) at a 45° Angle	NA	NA
5	Alcohol resistance	/	NA	NA
6	Surface hardness	/	NA	NA
7	Resistant to cosmetics	/	NA	NA
8	The packaging has dropped.	Falling face: one corner, three edges, six faces Number of drops: 10 times	NA	NA



Shenzhen Yingjiachuang Electronic Technology Co., LTD

<http://www.szsyjc.com>

		Floor material: Wood board/concrete		
9	Packaging vibration	Speed: 240 revolutions per minute, amplitude: 25.4mm, Frequency: 4HZ, test time: 2 hours per axis; X and Y axes	NA	NA

Watchmaking: Yin Feijie

Reviewer: Feng Yingmei

Confirmation: Fang Wenfeng



Shenzhen Yingjiachuang Electronic Technology Co., LTD

QC engineering drawing of built-in antenna

Product stage		☐ Trial production ☒ Mass production ☐ Other					File Number		YJC-QC092		Edition		A0		
Product name		Built-in antenna					Production date		2024/01/10						
Part name Process number	Flowchart				Process Name Job Description	Responsible department /group	The relevant documents/standards (control technologies) implemented	Manage the project		Characteristics	Management method			Executor	Adverse countermeasures
	ON	ze	/	/				Project	Output file/standard/record		Inspection tools	Sampling number	Sampling frequency		
Finished product assembly/inspection/packaging	9				First piece confirmation before production	Quality Department	Drawing /BOM/SOP/SIP/Enterprise Standard Q/YJC02-2022	1. Appearance, structure, function 2. The pull-out force of the first-generation terminal is ≥1.5kgf; 3. The standing wave meets the customer sample standards.	The first inspection report		Visual /tool	5pcs	Each batch	IPQC	If there are batch issues, stop pulling and improve
	10				Welded components	Production Department	Operation Instruction Manual	Temperature monitoring	Temperature inspection record sheet	▼	Point thermometer	Once per class	Once per class	IPQC	Process adjustment
	11				Inspection tour	Quality Department	Drawing /BOM/SOP/SIP/Enterprise Standard Q/YJC02-2022	1. Appearance, structure, function 2. The pull-out force of the first-generation	Inspection record	Visual/ tool	Visual/ tool	Random	Random	IPQC	Rework/repair



						2	on terminal is $\geq 1.5\text{kgf}$; 3. Stay in Poland to meet customer requirements							
12			*	Full inspection of the appearance and function of the manufacturing processes	Production Department /Quality Department	Drawings /BOM/ Operation instructions/Inspection instructions	1. Appearance, structure, function 2. Standing wave test	QC Original Record		Visual /net division	All	All	QC	Repair/Scrap
13			*	Reliability test	Quality Department	Drawing /BOM/SOP/SIP/ Enterprise Standard Q/YJC02-2022	Salt spray test, tensile test, etc	Type test report		Visual /tool	New products and quality assessment	New products and quality assessment	IPQC/ Team Leader	Rework/scrapping
14			QC ↓	Packaging	Production Department	Drawing /BOM/ Packaging operation Instruction manual	Appearance, craftsmanship, structure, function, packaging	Production Day Report	▼	Visual /tool	All	All	Operator	Repair/Scrap
Product inbound/outbound	15		*	Pre-shipment inspection	Quality Department	Drawing /BOM/SOP/SIP/ Enterprise Standard Q/YJC02-2022	Appearance, craftsmanship, structure, function, packaging	The OQC inspection is qualified		Visual inspection/Tools/electronic scale	AQL	Each batch	OQC	Rework



oun d / Pay	16	□ ↓	Finish ed produc ts are wareho used.	Produ ction Depar tment	Warehouse Management Regulations	Product name, quantity, and identification status	Wareh ouse recei pt		Visual inspec tion	Rand om	Random	War eho use kee per	Repor t for proce ssing
	17	▽ ↓	Finish ed produc t storag e	Finis hed produ ct wareh ouse	Warehouse Management Regulations	Temperature and humidity monitoring	Tempe ratur e and humid ity inspe ction recor ds		Thermo meter and hygrom eter	Ever y day	Every day	War eho use kee per	Repor t for proce ssing
	18	*	Out of the wareh ouse	Finis hed produ ct wareh ouse	Warehouse Management Regulations	Product name, quantity, and identification status	As per the custo mer's requi remen ts		Visual inspec tion	Rand om	Random	War eho use kee per	Repor t for proce ssing
	19	⊗	Delive ry	Sales Depar tment	Product delivery control procedure	Transportation status	Trans porta tion statu s		Visual inspec tion	Rand om	Random	bus ine ss ass ist anc e	Repor t for proce ssing

Note: ⊗= Work/processing ⊕= Quantity confirmation ▽= Wait ▮= Inspection ▼= Key process ⊖= Customer Special Requirements All production raw materials, auxiliary materials and tools must comply with ROHS requirements.

Prepared by Feng Yingmei, January 10, 2024

Reviewer: Yang Yungang

Approval: Xiao Han



Shenzhen Yingjiachuang Electronic Technology Co., LTD

CPK Report

CUSTOMER	Techway		MOLD. NO		YJC-6N090-B105		CAVITY QUANTITY		32pcs		
MODEL	2.4G black FPC built-in antenna (total length) L = 90MM		DATE-MEASURING		2025/11/15		The temperature during the test was 25℃ and the relative humidity was 60%				
DESCRIPTION	Compact camera		Sample craft		Material	Spraying	HSF Requirements		is		no
Dim. Designator	#1	#2	#3	#4	#5						
Nominal	90.00	18.20	12.80								
+ Tolerance	5.00	0.30	0.30								
- Tolerance	3.00	0.30	0.30								
Upper Limit	95.00	18.50	13.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Limit	87.00	17.90	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	92.00	18.26	12.89								
2	92.50	18.28	12.85								
3	90.00	18.29	12.83								
4	89.00	18.30	12.91								
5	91.00	18.27	12.92								
6	92.00	18.15	12.85								
7	92.00	18.18	12.88								
8	91.00	18.17	12.93								
9	92.00	18.18	12.90								
10	91.00	18.22	12.91								
11	92.00	18.23	12.94								
12	89.00	18.25	12.84								
13	89.00	18.27	12.87								
14	91.00	18.29	12.88								
15	91.00	18.25	12.89								
16	91.00	18.26	12.92								
17	92.00	18.25	12.91								
18	91.00	18.28	12.85								



Shenzhen Yingjiachuang Electronic Technology Co., LTD

<http://www.szsyjc.com>

19	91.00	18.31	12.84								
20	92.00	18.32	12.88								
21	91.00	18.16	12.86								
22	92.00	18.13	12.77								
23	91.00	18.17	12.75								
24	91.00	18.28	12.76								
25	91.00	18.32	12.74								
26	91.00	18.30	12.78								
27	91.00	18.31	12.88								
28	91.00	18.34	12.86								
29	91.00	18.34	12.88								
30	91.50	18.33	12.89								
31	91.00	18.25	12.92								
32	91.00	18.29	12.90								
Specification Center	91.000	18.200	12.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX.	92.500	18.340	12.940	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MIN.	89.000	18.130	12.740	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Average value	91.094	18.257	12.865	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
STDEV	0.865	0.059	0.054	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Ca process accuracy	0.02	0.19	0.22	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Cp process precision	1.54	1.70	1.86	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Cpk	1.50	1.37	1.46	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Result (Grade)	B	B	B	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
A	Cpk>1.67		The process capability is too sufficient. Keep it up.								
B	1.33< Cpk ≤ 1.67		The manufacturing process capability is sufficient and can be improved to Grade A.								
C	1.0 < Cpk ≤ 1.33		The process capability is acceptable, but process improvement is needed to reduce output variation and enhance quality.								
D	0.67< Cpk≤1		The manufacturing process capacity is insufficient. A comprehensive review must be conducted and measures taken. If necessary, production can be halted.								
E	Cpk ≤ 0.67		The manufacturing process capacity is seriously insufficient. Production is immediately halted. The cause is investigated and measures are taken to comprehensively improve the situation.								
Measure	Yin Feijie			Table			Yin Feijie				
Check	Fang Wenfeng			Date			2024/08/12				



Shenzhen Yingjiachuang Electronic Technology Co., LTD

BOM material proof

Product name	Material number	Composition	Material/Composition	Supplier	Model	Specification	Remarks
Antenna assembly	YJC-6N090-B105	FPC - Base Material	Base material electrolytic copper	CLG	Base material electrolytic copper	Base material electrolytic copper	
		FPC - Ink	Solder mask ink	YL	Solder mask ink	Solder mask ink	
		FPC - Adhesive Film	3M9471LE	3M	3M9471LE	3M9471LE	
		Coaxial cable - outer sheath	Polyperfluoropropylene resin	ZJJH	FEP	FEP	
		Coaxial cable - copper wire	Silver-plated copper wire	DGDW	Silver-plated copper wire	Silver-plated copper wire	
		Terminal - Metal Enclosure	Tin-phosphor bronze	FJZJ	C5210	C5210	
		Terminal - Rubber core	PBT	XG	D201G00-30BK	D201G00-30BK	
		Terminal - Gold-plated	Gold coating	FJZJ	Gold coating	Gold coating	
		Tin wire	Environmental-friendly tin wire	WS	Environmental-friendly tin wire	Environmental-friendly tin wire	

This sample is indeed made using the above-mentioned materials

The above information must be true and effectively implemented. Any losses caused by abnormalities will be transferred.

If there are any changes, the customer should be informed in advance and an application for change should be made. The change should be confirmed after obtaining the approval.



Shenzhen Yingjiachuang Electronic Technology Co., LTD
Sample Inspection Report

Customer	Ji Wei	Sample material	FPC	Sample submission quantity	3pcs
Sample name	2.4G FPC built-in antenna	Sample material number	YJC-6N090-B105	Inspection method	Full inspection
Sample Specification	18.20*12.80mm	Sample color	black	Inspection quantity	3pcs

Result: √ PASS FAIL

No.	Inspection items	Detection method	Result determination	Remarks
1	Appearance	Visual inspection	pass	
2	Material	Visual inspection	pass	
3	Colour	Visual inspection	pass	
4	Adaptability	Assembly and actual matching	pass	
5	Size	FPC/ caliper	pass	

Dimensional measurement record

No.	Inspection items	Specification value	Measurement record			Judgement
1	long	18.20±0.30mm	18.26	18.28	18.26	pass
2	wide	12.80±0.30mm	12.88	12.86	12.85	pass
3	Line length	90.00+5.00/-3.00mm	91.00	92.00	93.00	pass
4						
5						

Watchmaking: Yin Feijie

Reviewer: Fang Wenfeng

Confirmation: Xiao Han



FAI Test Report:

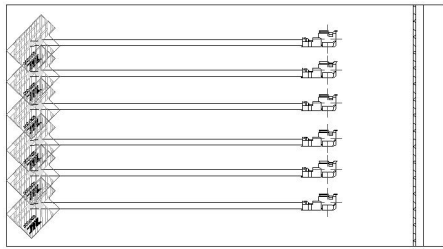
Full-size product inspection data report									
SUPPLIER : Shenzhen Yingjiachuang Electronic Technology Co., LTD			PART NUMBER : YJC-6N090-B105						
NAME OF INSPECTION FACILITY :			PART NAME : 2.4G FPC black built-in antenna						
ITEM	DIMENSION / SPECIFICATION (mm)	Measuring tools	SUPPLIER MEASUREMENT RESULTS (mm)					OK	NOT OK
1	18.20±0.30mm	Vernier caliper	18.25	18.28	18.25	18.26	18.27	√	
2	12.80±0.30mm	Vernier caliper	12.86	12.84	12.87	12.85	12.84	√	
3	90.00+5.00/-3.00mm	Steel ruler	92.00	93.00	92.50	92.00	92.00	√	
4									
5									
6									
7									
8									
9									
10									
Conclusion: All dimensions are qualified.		Verification: Zhu Pan Date: 2025.11.15							



Shenzhen Yingjiachuang Electronic Technology Co., LTD



Packaging and shipping method

Customer	Ji Wei	Sample material	FPC	Carton specifications	345*275*255MM
Sample name	2.4G FPC built-in antenna	Sample material number	YJC-6N090-B105	Packaging method	Refer to the following text
Sample Specification	18.20*12.80mm	Sample color	black		
Packaging instructions	100pcs per bag, 40 bags per box. A total of 4,000 PCS per box (with shipping labels attached to the outer box/shipping report included inside)				
Serial number	Workstation	Picture	Explanation	Remarks	
1	PE bag		100pcs per bag		
2	Seal the box		100pcs per bag, 40 bags per box. A total of 4,000 PCS per box		
3					

Watchmaking: Yin Feijie

Reviewer: Fang Wenfeng

Confirmation: Xiao Han



List of environmental protection reports

Our company hereby guarantees that all the data recorded and attached in this "Environmental Protection Report List" are true. If there is any inaccuracy (including but not limited to the inconsistency between the material number and the original test report),

For any damage caused to Shenzhen Jiwei Technology Co., LTD., we are willing to bear full liability for damages to Shenzhen Jiwei Technology Co., LTD.

Component Name: 2.4G black FPC built-in antenna, length L = 90MM

Component part number: 3.014.001.0026

Supplier material number: YJC-6N090-B105

The company that issued the report: Shenzhen Yingjiachuang Electronic Technology Co., LTD

Report issuance date: August: 2025.11.15

Company representative: Xiao Han

Representative's title: General Manager

Name of Constituent materials	Raw material Manufacturer	ICP Report Number	Testing institution	Test time	Test result values (units: ppm, mg/kg each of sample)										Remarks
					Pb	Cd	Hg	Cr6+	PBB	PBDE	DIBP	DEHP	BBP	DBP	
FPC substrate	CLG	SHAEC24028809006	SGS	24/12/20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
FPC adhesive film	YL	SHAEC24027480901	SGS	24/12/06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
FPC ink	3M	ETR25501383	SGS	25/05/20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Coaxial cable	ZJJH	NGBPC24007471212	SGS	24/12/23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Terminal housing	FJZJ	CANEC24029407216	SGS	25/01/08	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Gold coating	FJZJ	A2250437743101001E	CTI	25/06/27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	



Shenzhen Yingjiachuang Electronic Technology Co., LTD
<http://www.szsyjc.com>

Terminal rubber core	XG	48279652A4001	CTI	25/07/25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Environm ental-fr iendly tin wire	WS	SZXPC25000282511	SGS	25/02/27	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	