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acknowledgement

SPECIFICATION FOR APPROVAL

Customer Name (CUSTOMER): Tiansen

Product name (DESCRIPTION): 2.4G/5.8G built-in antenna

Customer Specification (PART NO):

Part number (PARTNO): YJC-90N164-V1

Sample delivery date (DATE):

Acknowledged number (APPROVED NO): ZG-承-250416001

TOP-LINK Co., Ltd		Customer Approval	
Prepare	Approval	Check	Approval
PeterWang	Mike		

Shenzhen Zhi Gao Infinite Communication Technology Co., LTD

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catalogue

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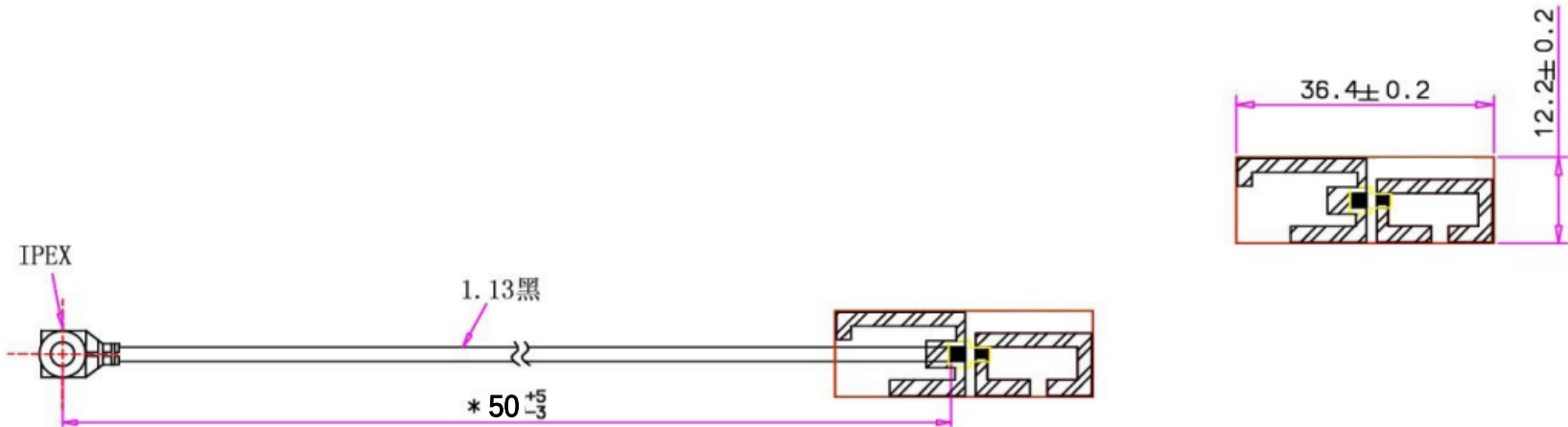
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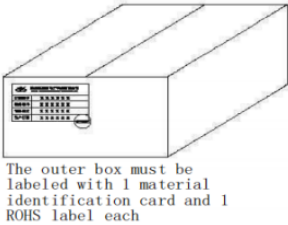
curriculum VITAC:

editio n	Change content and reason for change	date	sell wholes ale
A/0	First edition issued	March 28, 2025	

REVISION	DESCRIPTION	DATE	DRAFTER
A0	initial issue	2023.5.12	JOHN
A1	修改线长	2024.3.28	JOHN



- Requirement:
1. The finished product must be 100% tested for conductivity and OK
 2. The finished product must undergo 100% full inspection and OK
 3. The finished product adopts an environmentally friendly process
 4. Meet ROHS requirements
 5. For unmarked tolerances, please refer to the general tolerances
 - 6.*Annotate key dimensions



The outer box must be labeled with 1 material identification card and 1 ROHS label each

频率范围(FREQUENCY RANGE)	2400~2500/5150~5850MHz
增益 (Gain)	3.0dB1
电压驻波比(VSWR)	<1.92:1
极化 (Polarzation)	Linear.Vertical
最大功率(Mae power rating)	50W
特性阻抗 (Impedance)	50欧姆

GENERAL TOLERANCE: LINEAR: X ±2.00 X.X ±1.00 X.XX ±0.20 X.XXX ±0.01 ANGLE: X° ±4.00° X.X° ±3.00° X.XX° ±2.00° X.XXX° ±1.00°		深圳市至高无限通信技术有限公司 SHENZHEN TOP-LINK COMMUNICATION TECHNOLOGY CO.,LTD			
FILE NAME:	产品图	TITLE:	2.4G/5.8G PCB内置天线 L=50MM+I-PEX		
ENG/DATE:	2024.11.4	P/N:	ZG-R51C11350A-B		
CHE/DATE:	JOHN	UNIT:	mm	SCALE:	1:1
APP/DATE:	MIKE	REVISION:	A0	SHEET:	1/1

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Antenna technical parameters and environmental test:

Electrical technical parameters			
Electrical performance index		Electrical Specifications	
frequency range	2400-2500/5150-5850MHz	Frequency Range	2400-2500/5150-5850MHz
voltage standing-wave ratio	<1.92	VSWR	<1.92
input impedance	50 Q	Input Impedance	50 Q
direction	omnidirectional	Direction	All
gain	4.09dBi	Gain	4.09dBi
Mechanical indicators		Mechanical Specifications	
Antenna color	black	Antenna Color	Black
Interface form	XD	Input connector	XD
Wire length	50mm	Wire length	50mm
working temperature	-20℃~+70℃	Working Temperature	-20℃~+70℃
Working humidity	20%~80%	Working Humidity	20%~80%

Environmental performance test:

project	test condition	specifications
Storage environment	If no specific test temperature, humidity and pressure are specified, the following shall be tested: 1. The temperature is -30℃ ~ +80℃ 2. Relative humidity is 45%-85% 3. Pressure is 86kpa-106kpa	Electrical and mechanical performance is normal

thermocycling	Five cycles were performed between 70°C and-20°C, and then the appearance quality was checked under normal conditions for 1-2H.	The size shall meet the requirements and shall meet the mechanical and electrical performance
Resistant to constant wet heat test	The relative humidity is $95\pm 3\%$, and the test temperature is 40°C. After 2H of action, the electrical properties of the sample are measured within 5min after the sample is taken out. The appearance quality of the sample is checked under normal conditions for 1-2H	The size shall meet the requirements and shall meet the mechanical and electrical performance
vibration test	Frequency range 10-55HZ, displacement amplitude: 0.35MM, acceleration amplitude: 50.0M/S, Scan frequency cycle: 30 times	Electrical and mechanical performance is normal
fall-down test	The 1M high altitude is freely dropped three times in the direction of mutually perpendicular axis	Electrical and mechanical performance is normal

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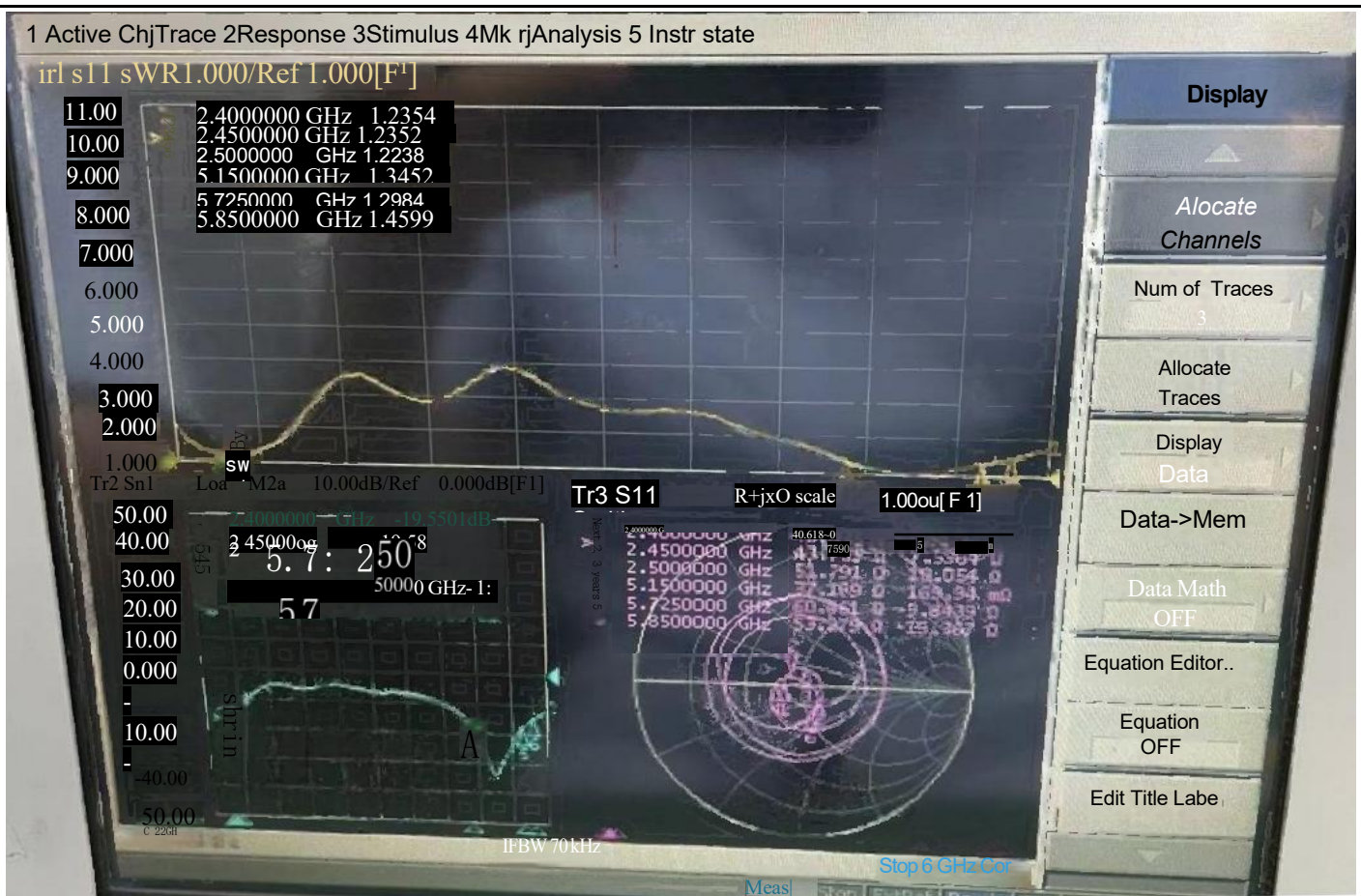
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Antenna physical diagram:



Antenna performance test diagram:

Agilent Technologies 507S1eB ricsN30et0wko r kzA:8n.5alGyHzøzr



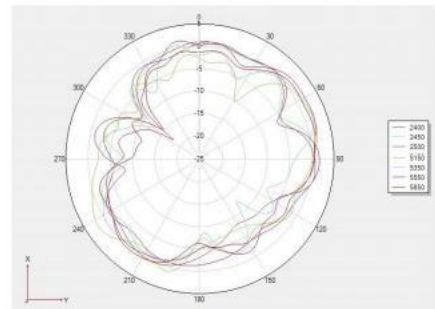
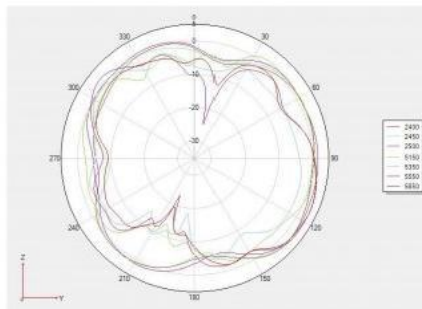
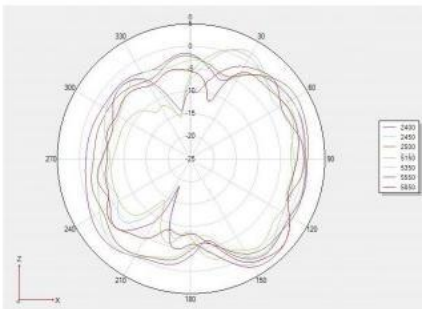
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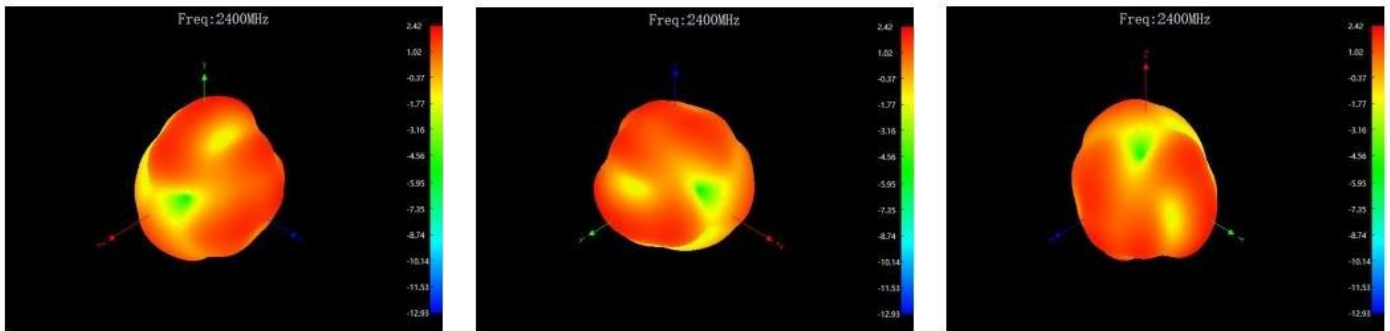
2D, 3D test data (2.4G/5G) :

Frequency	Efficiency(%)	Gain. (dBi)
2400MHz	55.59	2.42
2410MHz	56.23	2.61
2420MHz	57.58	2.62
2430MHz	53.09	2.44
2440MHz	58.17	2.64
2450MHz	56.2	2.51
2460MHz	53.08	2.54
2470MHz	58.64	2.94
2480MHz	57.32	2.83
2490MHz	58.19	3.07
2500MHz	59.95	3.44
5150MHz	52.5	3.33
5250MHz	51.5	3.53
5350MHz	52.36	3.07
5450MHz	55.92	3.68
5550MHz	50.12	4.09
5650MHz	54.31	3.58
5750MHz	52.64	3.25
5850MHz	53.45	3.31

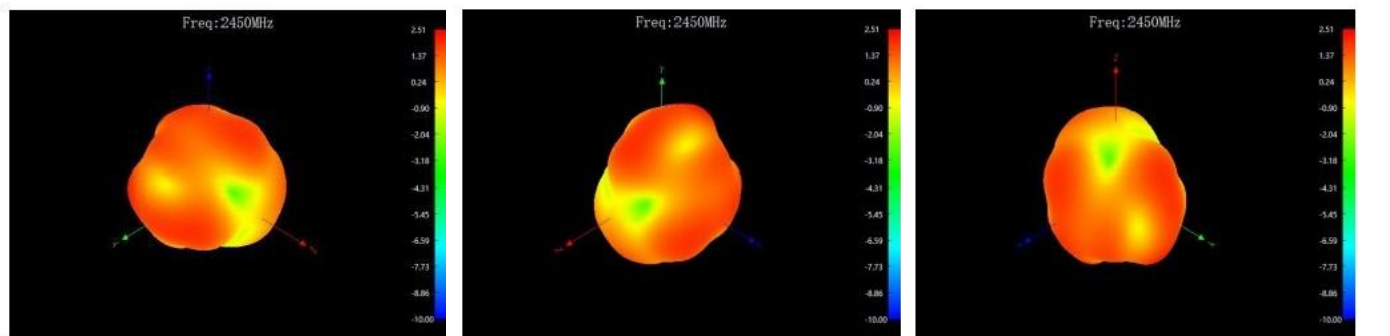
Phi02D Diagram: Phi 902D diagram Theta 902D diagram



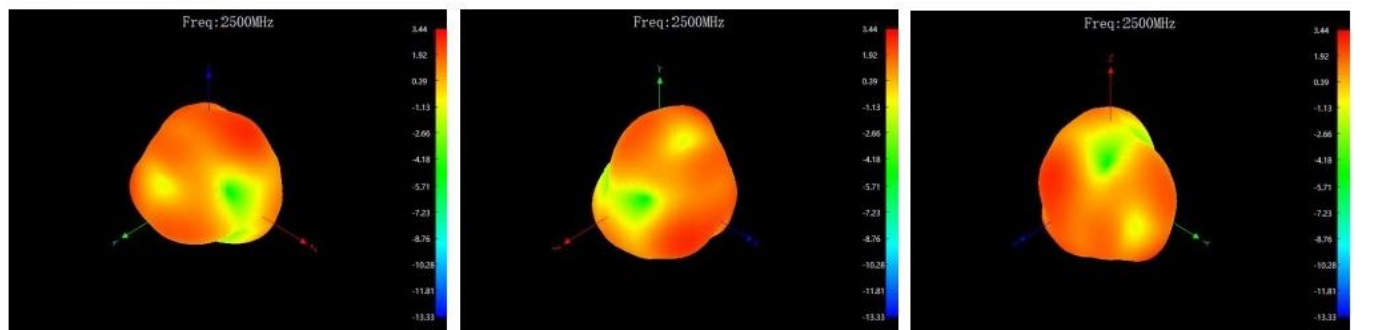
3D 2400:



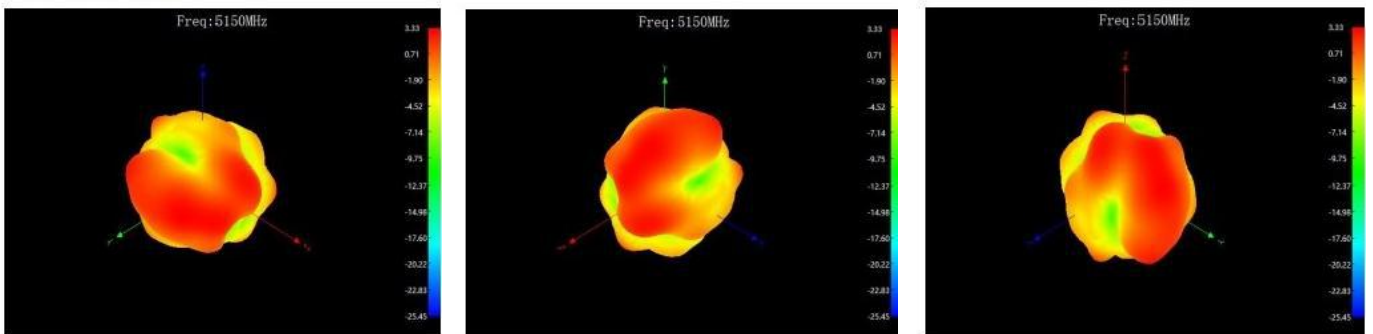
3D 2450:



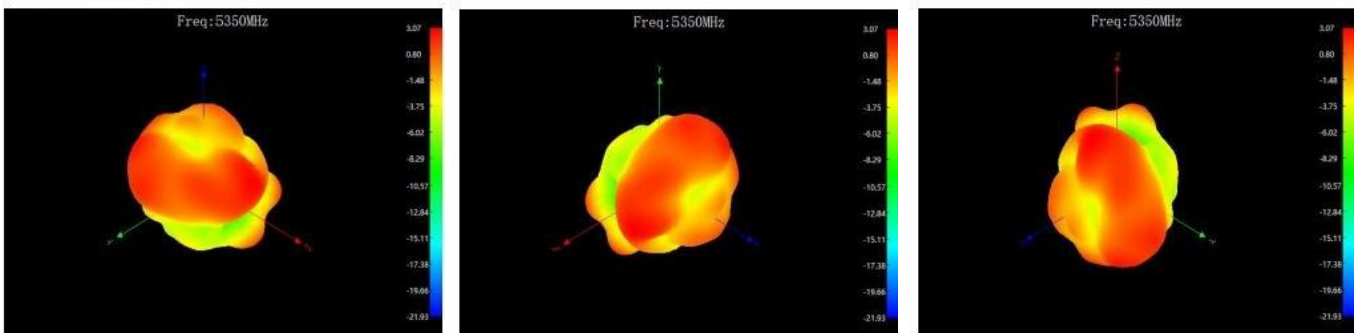
3D 2500:



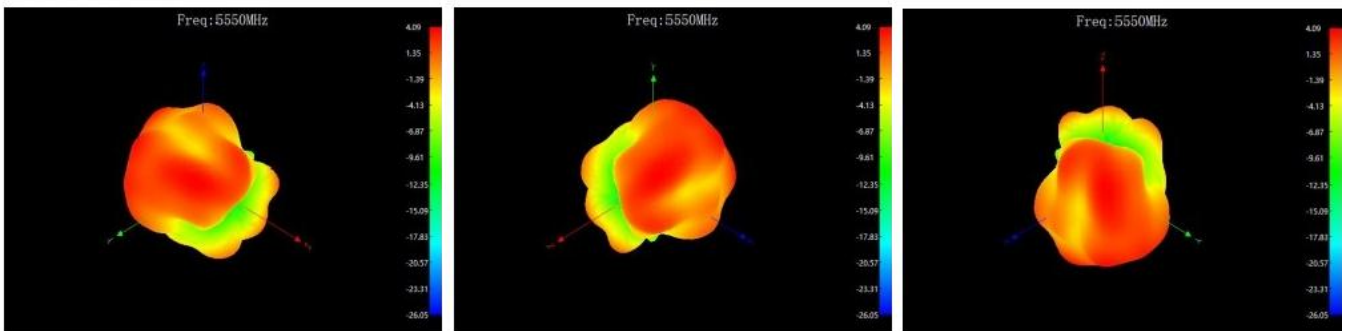
3D5150:



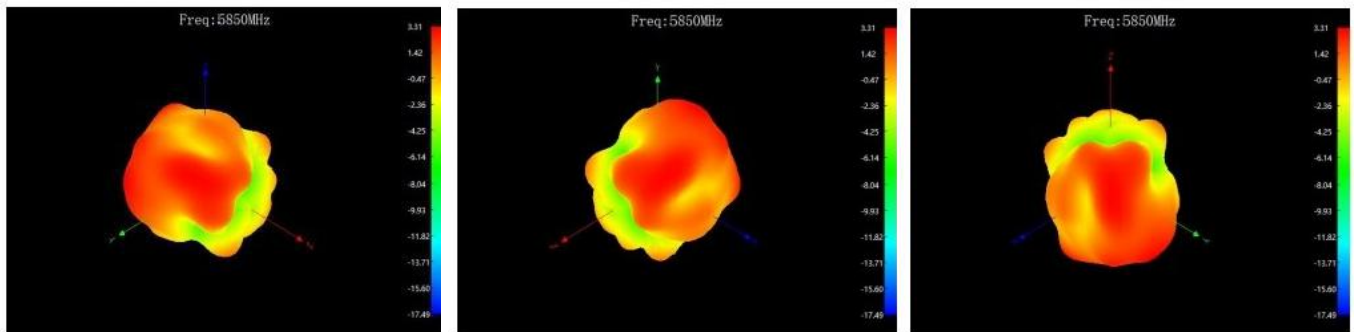
3D5350:



3D5550:



3D5850:



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ROH S material control report											
We hereby certify that the raw materials used in the components and auxiliary materials delivered to your company, as well as the additives used in the production process, comply with the environmental requirements of the RoHS Directive on the use of hazardous substances (RoHS Directive 2011/65/EC)											
The composition of raw materials used for components and auxiliary materials, packaging materials and additives used in the production process is reported as follows:											
Material name of the composition Component /Part Name	Make up the materials Material Composition	ICPreport number ICPreport#	Testing organization Test Org.	testing time Test Date	Contamination levels (ppm)						Are they qualified ? PASS?
					Cd	Pb	Hg	Cr+	PBB	PBDE	PASS
wire stock	Teflon 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 plate	A2240410234101001E	CTI	24/07/16	ND	ND	ND	ND	ND	ND	PASS
	Ceramic core	A2240126395101003E	CTI	24/03/16	ND	ND	ND	ND	ND	ND	PASS
Environmentally friendly tin foil	Environmentally friendly tin foil	SHAEC24006459102	SGS	24/04/10	ND	78	ND	ND	ND	ND	PASS

FPC	printing ink	A223046640210102ER1	CTI	23/09/13	ND	ND	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