



客戶名稱 : **LG**
CUSTOMER

Document No.: _____
Approval Sheet Rev.: A0
Spec. Rev. : A0

承認書

APPROVAL SHEET

產品品名/Product Model No. : WA-P-LELE-04-085

客戶料號/Customer No. : EAA30099901

專案名稱/Project Name: 17Z90U

發行日期/ Issue Date : 2025/09/11

承認日期/ Approved Date : 2025/09/11

Approved by customer: (signing or stamping here)



INPAQ WEB

履历表

History List

[illegible]

WA-P-LELE-04-085 Specification

1. Explanation of part number :

WA - P - LELE - 04 - 085
(1) (2) (3) (4) (5)

(1) Product Type : Wireless Antenna

(2) PCB: PCB

(3) Frequency : 2400~2500MHz&5100~5800MHz&5925~7125MHz

(4) Coaxial Cable Type : With ϕ 0.81 Main Black / AUX Gray

(5) Suffix : 085

2. Storage Condition:

Temperature -40 to +70℃
Humidity 20 to 65 %RH

3. Operating Condition:

Temperature -40 to +70℃
Humidity 10 to 85 %RH

4. Electrical Specification :

*Those specifications were specially defined for **LG WIFI** model, and all characteristics were measured under the model's handset testing jig .*

4-1. Frequency Band:

Frequency Band	MHz
WIFI\BT	2400~2500 & 5100~5800 & 5925~7125

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TITLE : WA-P-LELE-04-085 Specification		DOCUMENT NO.	PAGE REV. P2

4-2. Impedance

50 ohm nominal

4-3. Matching circuit

None

4-4. VSWR

4-4.1 Measuring Method

1.A 50Ωcoaxial cable is connected to the antenna. Then this cable is connected

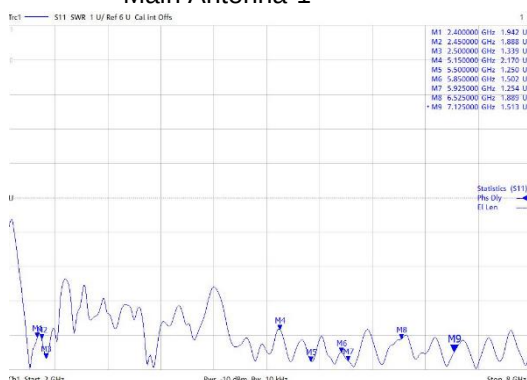
to a network analyzer to measure the VSWR

2.Keeping this jig away from metal at least 20cm

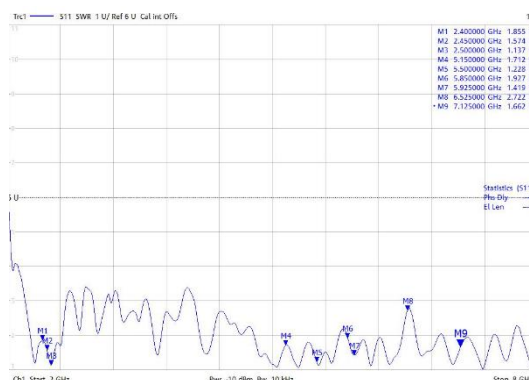
4-4.2 Measurement frequency points and VSWR value

VSWR	Frequency (Unit MHz)	Spec	1
Main Antenna	2400	≤ 3.5	1.9
	2500	≤ 3.5	1.3
	5150	≤ 3.5	2.2
	7125	≤ 3.5	1.5
	Judgement		ok
Aux Antenna	2400	≤ 3.5	1.9
	2500	≤ 3.5	1.1
	5150	≤ 3.5	1.7
	7125	≤ 3.5	1.7
	Judgement		ok

Main Antenna-1



AUX Antenna-1



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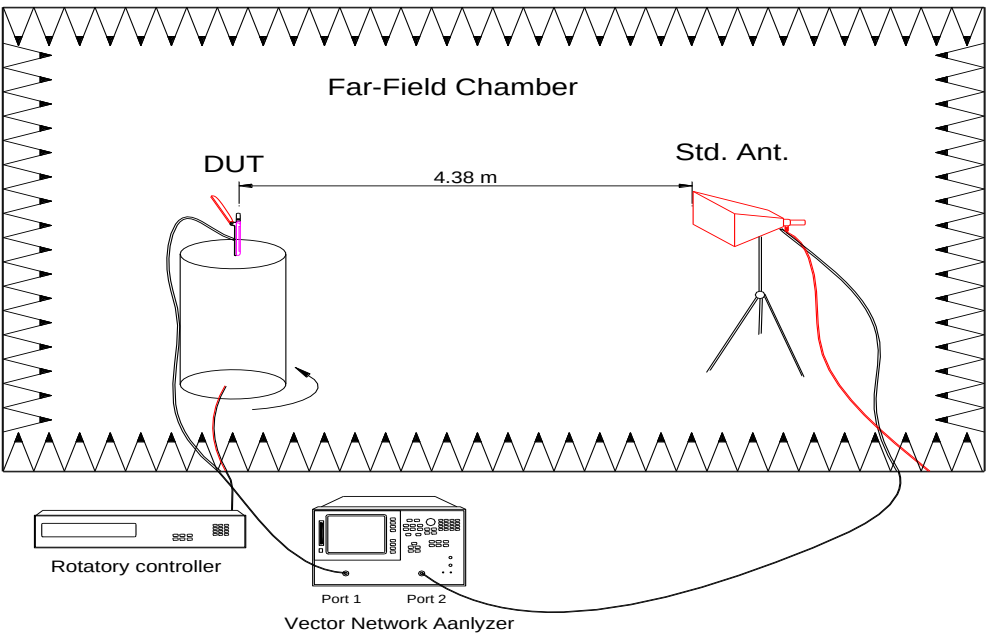
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4-5. Efficiency and Gain

4-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

4-5.2 Chamber definition



1. An anechoic chamber (8mx4mx3.5m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

4-5.3 Efficiency and Gain

Antenna gain is marked (dBi) and is based on STANDARD HORN antenna. The data shows Peak Gain and Average Gain.

4-5-3-1 Electrical specification

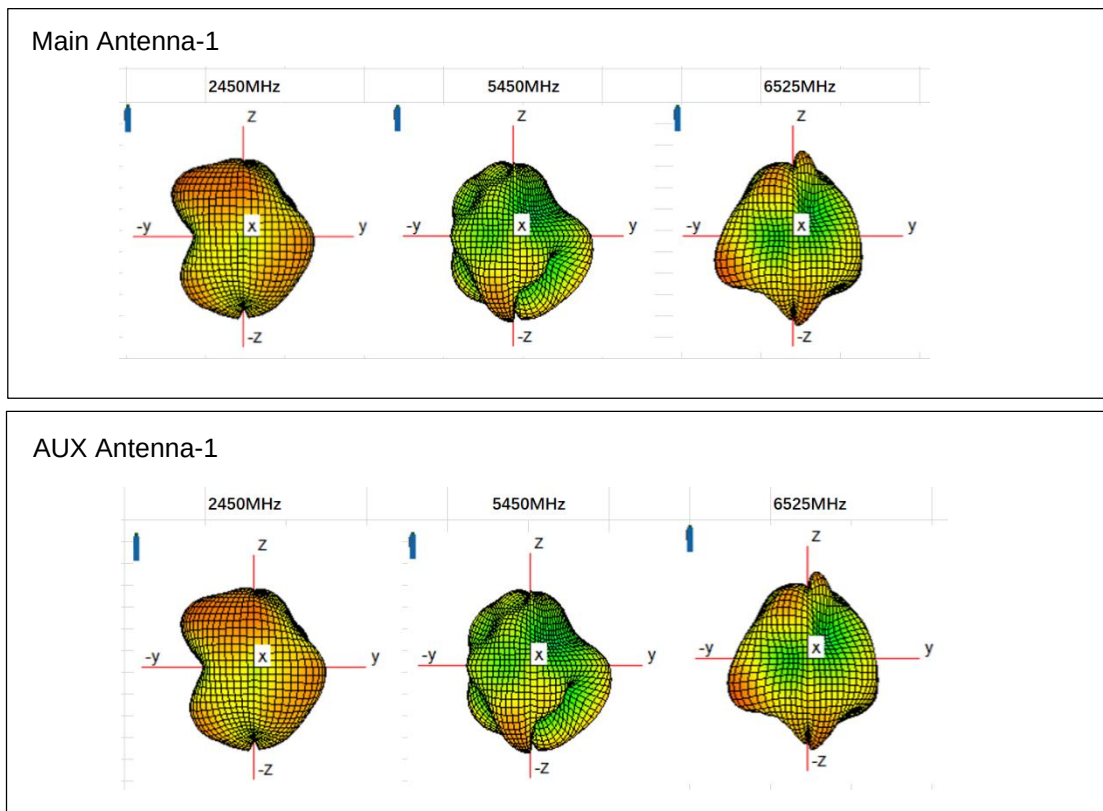
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Frequency (MHz)	Average Efficiency (%)
2400~2500	>30
5100~5825	>20
5925~7125	>20

4-5.3-2 Efficiency and Gain Test Data

Freq(MHz)	Main Antenna			AUX Antenna		
	Efficiency_dB	Gain	Efficiency(%)	Efficiency_dB	Gain	Efficiency(%)
2400	-4.43	1.38	36.02	-5.54	1.29	27.94
2450	-3.99	1.46	39.91	-4.63	2.00	34.40
2500	-4.02	2.15	39.62	-4.71	0.81	33.81
5150	-6.15	-1.14	24.25	-6.48	-0.60	22.49
5470	-6.27	0.11	23.60	-6.49	1.41	22.43
5850	-5.39	1.55	28.91	-5.27	1.92	29.73
5925	-5.21	0.13	30.13	-6.15	1.18	24.25
6525	-5.46	2.84	28.47	-5.39	-0.51	28.89
7125	-5.00	0.47	31.64	-6.02	0.91	24.97

4-5.3-3 Antenna 3D Radiation Pattern



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5. Mechanical Specification:

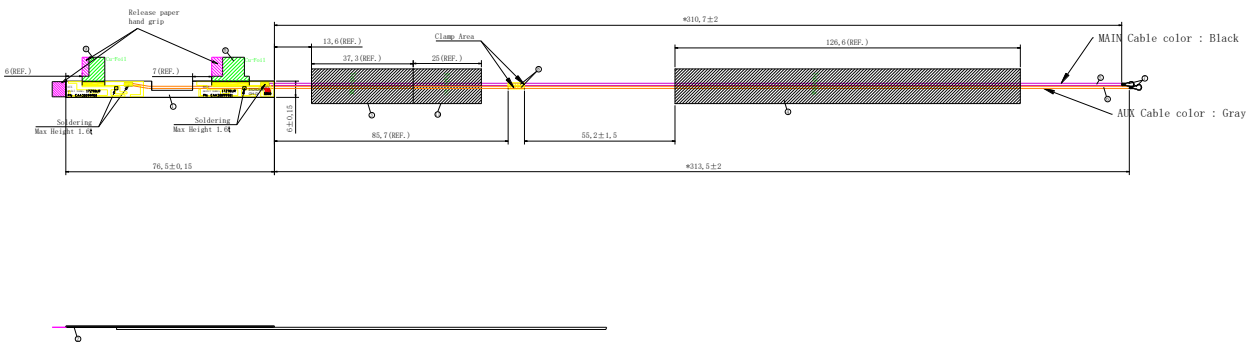
Connector: I-PEX MHF 4L: 20572; Cable: RF Cable 0.81（Main Black/Aux Gray）

Cable length: Main Antenna L: 327±2mm(Exclude connector)

Aux Antenna L: 376.3±2mm(Exclude connector)



Mechanical Configuration: (* dimension is important dimension)



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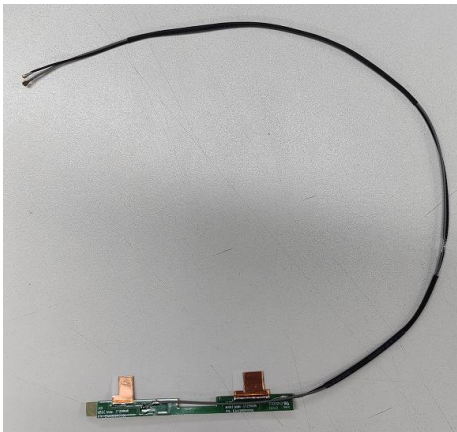
Material list :

Item	Description	Material	Quantity
1	PCB	FR4 76.5*6mm,T0.4mm	1
3	TAP	3M467 75.6*5.2mm	1
4	Shrink Tube	Shrink Tube black, ϕ 1.5 x37.3mm	1
5	Shrink Tube	Shrink Tube black, ϕ 1.5 x126.6mm	1
6	Cable black	Cable 0.81 black	1
7	Cable gray	Cable 0.81 gray	1
8	Connector	I-PEX MHF 4L for 0.81, 20572	2
9	Clamp	Clamp 0.81 5mm	2
10	CU-Foil	CU-Foil 10.1*8.3	1
11	CU-Foil	CU-Foil 13.8*10.2	1
12	醋酸布	25*10	1

6. UL File No:

ITEM	DESCRIPTION	SUPPLIER	UL File No
1	PCB	HA0129	E202191
2	CABLE	HA0008	E318898
		HA0053	E464731

7. Product Picture:



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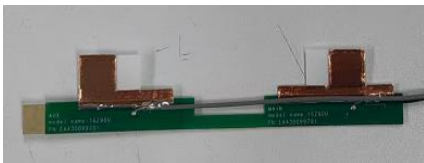
WA-P-LELE-04-085 PART LIST				
品名	说明	用量	厂商	地址
PCB	PCB T0.4 WA-P-LELE-04-085	1PCS	光宏	GuangDong China
Connector	CON,I-PEX MHF4L,20572-001R-08	2PCS	DAI-ICHI	Japan
Cable Black	WIR,RF-OD0.81mm,Low Loss,BLACK	1PCS	ShenYu,YuanDa	ShenYu,YuanDa
Cable Gray	WIR,RF-OD0.81mm,Low Loss,GRAY	1PCS	ShenYu,YuanDa	ShenYu,YuanDa
TAP	TAP 3M467 75.6x5.2mm	1PCS	轩震	JiangSu China
Clamp	058-00S1-0024 线扣	2PCS	科信成	JiangSu China
Shrink Tube	超薄热缩套管 (Φ1.5) 黑色 74MM	1PCS	沃尔	GuangDong China
Acetate Tape	Acetate tape (醋酸布)	1PCS	春光	JiangSu China
Cu Foil	Cu Foil	2PCS	春光	JiangSu China

Version2.0
Establish2017/7/14
Revised2017/11/28

HSMS Check sheet		Checking Result (Suppliers)		Remark
区别 (구분)	内容 (내용)	Yes	No	
Level A-I	HSMS上登录的“有害物质分析成绩书”固有码需要跟系统上Key-in的成绩书里固有号码一致 HSMS에 등록된 '유해물질 분석성적서'의 고유번호를 시스템에 Key-in한 성적서 고유번호와 일치하게 한다.	Yes		
	HSMS上登录的“有害物质分析成绩书”的发行日或者测试日需要跟系统上Key-in的成绩书发行日一致 HSMS에 등록된 '유해물질 분석성적서'의 발행일 또는 측정일이 시스템에 Key-in한 성적서 발행일과 일치하게 한다.	Yes		
Substance Name	HSMS上Key-in的CAS No及构成比率需要跟附上的MSDS内容一致 HSMS에 Key-in된 Cas No 및 구성비율은 첨부된 MSDS의 내용과 동일하여야 한다.	Yes		



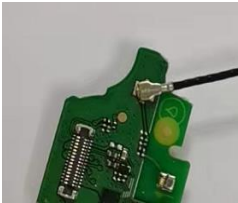
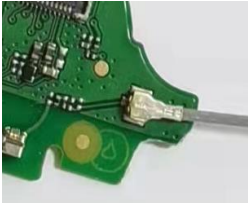
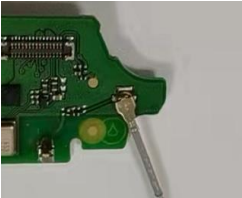
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HOLYPAQ Technology Co.,Ltd.

Product Type	WA-P-LELE-04-086					
Date	2025/7/17					
Item	Appearance					
Inspection person						
Sample size	5EA					
Judgement Criteria	① MAKER标志状态肉眼来确认 MAKER 표기 상태를 육안으로 확인한다. → 能确认标记状态而跟承认书里的文句一致 표기 상태 확인이 가능하고, 승인원상 문구 일치 할 것 ② PIN의 배열顺序跟图档指定一致, 而且没有PIN的折弯、破损、腐蚀 PIN의 배열 순서가 도면 지정과 일치하며 PIN의 휨, 파손 및 부식이 없을 것 ③ Housing部分没有破损而跟图档规格一致, MOLD物没有未成型、FLASH、WELD LINE等 HOUSING 부 파손이 없고 도면 사양과 일치 할 것, MOLD물은 미성형, FLASH, WELD LINE등이 없을 것. ④ 确认MARKING状态 - 使用放酒精的绒布在MARKING部分往复5次的时候, 没被擦掉而且肉眼来能确认 MARKING 상태 확인 및 불멸 잉크 여부를 확인한다. 시험방법 : 알코올을 묻힌 용으로 MARKING부위에 5회 왕복 판정기준 : 문구 지워지지 않고, 육안으로 글씨 확인이 가능할 것 ⑤ Cable의 선种及Maker信息跟图档指定内容一致, Cable铠装没有裂开或者砍痕等类的损伤, 色彩跟图档指定一致 CABLE부 선종과 Maker 정보가 도면에 지정된 내용과 일치하며 CABLE 피복이 갈라지거나 찍힘 등 손상이 없을 것, COLOR(색상)가 도면 지정을 만족할 것.					
Sample number	1	2	3	4	5	Representative picture (项目部位照片)
①	OK	OK	OK	OK	OK	
②						
③	OK	OK	OK	OK	OK	
④	OK	OK	OK	OK	OK	
⑤						

*代表照片一定要拍跟检查项目有关部分而不是天线整个照片

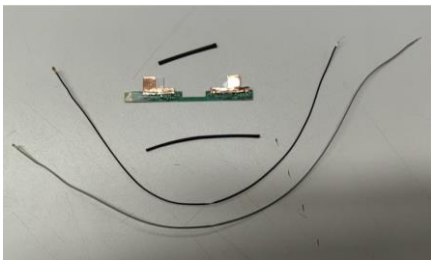
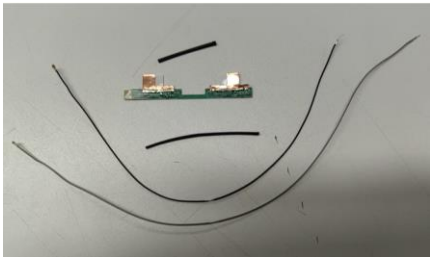


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Product Type	WA-P-LELE-04-086	
Date	2025/7/17	
Item	Assemble	
Inspection person		
Sample size	5EA	
Test condition	有接头的天线施行，确认相对物或者SET形合性 커넥터가 있는 Antenna에 한하며, 상대물 이나 SET 형합성 확인할 것	
Judgement Criteria	连接时，无异常（无干涉、破损） 체결 시, 이상 없을 것 (간섭, 파손 없을 것)	
Sample number	Representative picture (项目部位照片)	Result
1		Ok
2		Ok
3		Ok
4		Ok
5		Ok



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Product Type	WA-P-LELE-04-086	
Date	2025/7/17	
Item	Dis-assemble	
Inspection person		
Sample size	2EA	
Test condition	以承认书图档为准把实物对比验证 승인원 도면과 현물을 비교 검증한다.	
Judgement Criteria	① Cable无断线、错排线、漏掉 케이블의 단선, 오배선, 누락이 없을 것 ② 组装状态跟承认书图档一直 조립 상태가 승인원 도면과 일치 할 것 ③ 附着物 (Tape、海绵) 位置一直而无异常 (漏掉、破损) 부착물 (Tape, 스펀지) 위치 일치하고 이상 없을 것 (누락, 파손) ④ 确认 FPCB Soldering状态 PCB 적용 시, Soldering 상태 확인 - 没有冷焊、少焊、过焊、零件Lead尺寸不良 냉땜, 소납, 과납, 부품 Lead 길이 불량 없을 것 - 零件之间没有 touch 부품간 터치가 되지 않을 것	
Sample number	Representative picture (拆卸后照片)	Result
1		Ok
2		Ok

Product Type	E-2000 (2000g)														
Date	2024/1/17														
Item	Tape adhesion														
Inspection item	Tape adhesion														
Sample size	100														
Equipment															
Test condition	To confirm the double-sided tape adhesive condition and measure adhesive strength (Push/Pull gap)														
Judgment Criteria	1. Appearance : Tape附着位置剥落痕一箇、无异常 Tape 貼付 위치가 도면과 일치 하고 이상을 없을 것 ※ 异常 : Tape 剝離、附着位置不一致、有脱落部分、异常 Tape 剝離, 剝離 위치 상이, 부분 떨어짐, 오점 2. Adhesive strength : Strength should be consistent with the specifications														
Sample number	1	2	3	4	5	Auto	直接輸入 (Spec)		Auto	Auto	Auto	Auto	Auto	Auto	Auto
Appearance						Z2	USL	LSL	Average	公差	Sample size	Z USL	Z LSL	Z USL (%)	Z LSL (%)
Adhesive strength (Spec :)	75.66	75.63	75.65	75.66	75.65	75.6	76.10	75.10	75.65	0.01	5.0	36.7	44.9	0.00	0.00



Test item list

ITEMS	PAGE
Heat shock test	2
High-temperature storage test	4
Low-temperature storage test	6
High-temperature and humidity test	8
Vibration test	10
Drop test	12
PAD tensile force test	14
Connector un-mating force test	15

Date : 2021-01-06



Heat shock test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	No damage, corrosion, subsidence, scratches and other defects Electrical compliance with specifications		
Test Condition :	在85°C 30分钟, 在-40°C 30分钟 10cycle 储藏及常温2个小时放置后没有机构·电气的异常 85°C에서 30분, -40°C에서 30분 10cycle 저장 및 상온 2시간 방치 후 기구적·전기적 이상 없을 것		
Equipment :	Cold and hot shock equipment		

1. Result :

	Before test				After test							
	VSWR				VSWR				VSWR(Rate of change)			
	Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant	
	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz
	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	30%	30%	30%	30%
1	2.6	2.73	2.76	1.71	2.44	2.63	2.61	2.11	16%	10%	15%	-26%
2	2.54	2.74	2.35	1.67	2.19	2.77	2.75	1.95	15%	-3%	-20%	-28%
3	1.62	2.19	2.7	1.86	2.22	2.15	2.33	1.63	-26%	4%	17%	23%
4	2.5	2.61	2.49	1.62	2.33	2.63	2.15	1.85	17%	-2%	34%	-23%
5	2.65	2.45	2.22	1.7	2.45	2.51	2.32	1.47	20%	-6%	-10%	23%

2. Result structure:

	Judgment criteria	Result
1	No damage, corrosion, subsidence, scratches and other defects	OK
2		OK
3		OK
4		OK
5		OK

Contact resistance: Because this is connector type antenna, it has not any contact resistance, please refer to connector spectation

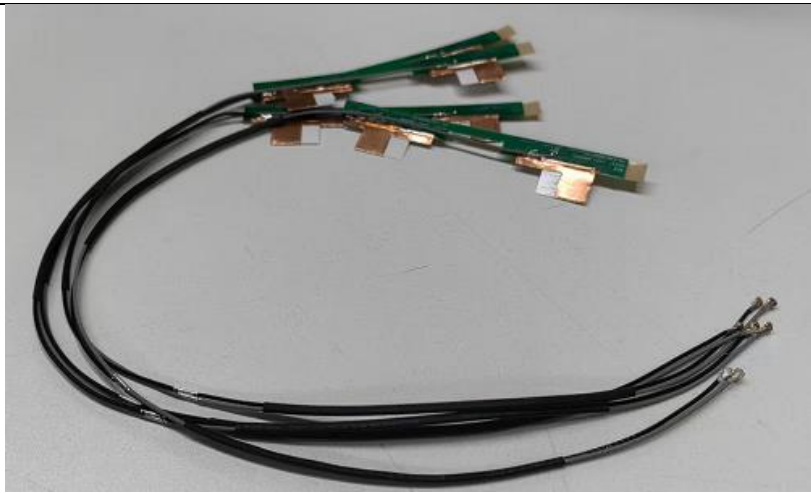
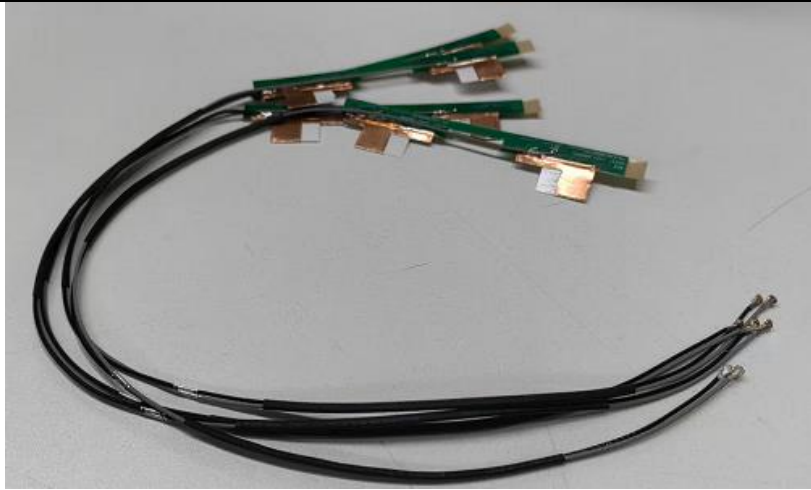
Judgment: OK

Inspector: 王紅麗

Approver: 吉金娟



3. Actual Picture

Before		
After		



High-temperature storage test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	No damage, corrosion, subsidence, scratches and other defects Electrical compliance with specifications		
Test Condition :	在80°C储藏96个时间及常温2个小时放置后没有机构·电气的异常 80°C에서 96시간 저장 및 상온 2시간 방치 후 기구적·전기적 이상 없을 것		
Equipment :	Electric blast equipment		

1. Result :

	Before test				After test							
	VSWR				VSWR				VSWR(Rate of change)			
	Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant	
	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz
	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	30%	30%	30%	30%
1	2.25	2.76	2.59	1.71	2.44	2.59	2.41	1.86	-19%	17%	18%	-15%
2	2.05	2.74	2.69	1.67	2.19	2.69	2.5	1.95	-14%	5%	19%	-28%
3	2.11	2.19	2.31	1.86	2.22	2.15	2.4	1.73	-11%	4%	-9%	13%
4	2.42	2.61	2.92	1.62	2.33	2.6	2.19	1.95	9%	1%	73%	-33%
5	2.33	2.45	2.23	1.7	2.45	2.41	2.32	1.47	-12%	4%	-9%	23%

2. Result structure:

	Judgment criteria	Result
1	No damage, corrosion, subsidence, scratches and other defects	OK
2		OK
3		OK
4		OK
5		OK

Contact resistance: Because this is connector type antenna, it has not any contact resistance, please refer to connector spectation

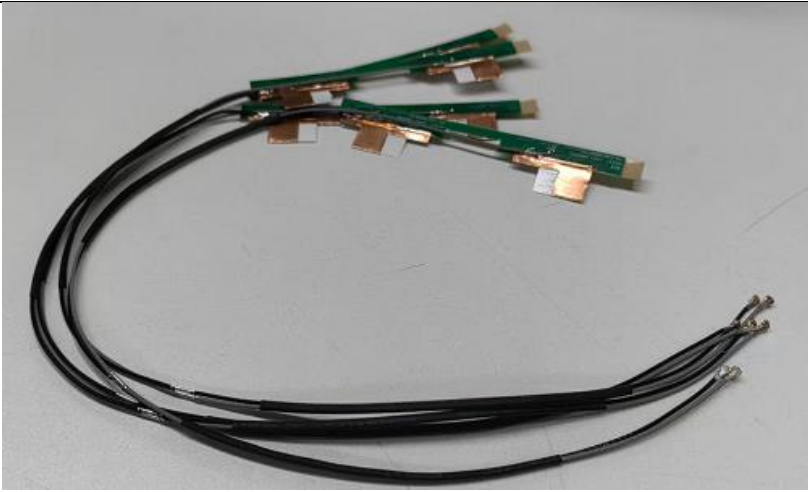
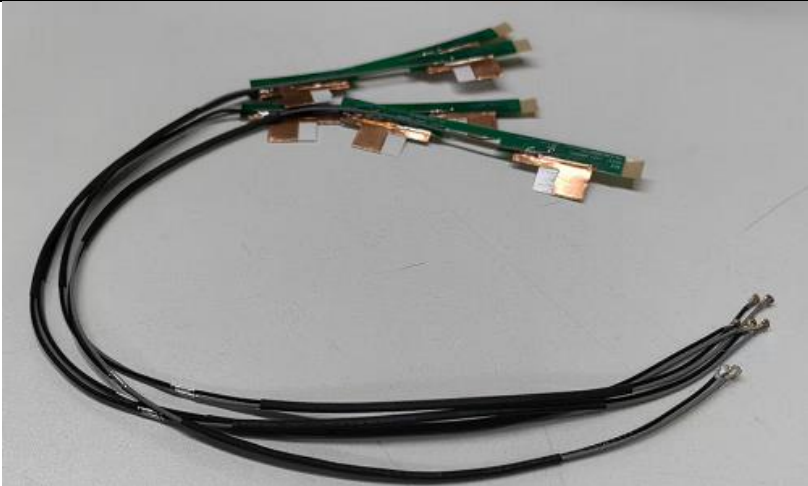
Judgment: OK

Inspector: 王紅麗

Approver: 吉金娟

3. Actual Picture



Before		
After		



Low-temperature storage test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	No damage, corrosion, subsidence, scratches and other defects Electrical compliance with specifications		
Test Condition :	在-20℃储藏96个时间及常温2个小时放置后没有机构·电气的异常 -20℃에서 96시간 저장 및 상온 2시간 방치 후 기구적·전기적 이상 없을 것		
Equipment :	Low temperature equipment		

1. Result :

	Before test				After test							
	VSWR				VSWR				VSWR(Rate of change)			
	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	30%	30%	30%	30%
	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz
1	2.69	2.76	2.61	1.6	2.63	2.43	2.41	1.86	6%	33%	20%	-26%
2	1.98	2.56	2.5	1.69	2.05	2.52	2.63	1.95	-7%	4%	-13%	-26%
3	2.11	2.31	2.48	1.81	2.11	2.33	2.22	1.73	0%	-2%	26%	8%
4	2.41	2.35	2.71	1.55	2.42	2.64	2.45	1.75	-1%	-29%	26%	-20%
5	2.31	1.84	2.4	1.7	2.33	2.51	2.31	1.47	-2%	-67%	9%	23%

2. Result structure:

	Judgment criteria	Result
1	No damage, corrosion, subsidence, scratches and other defects	OK
2		OK
3		OK
4		OK
5		OK

Contact resistance: Because this is connector type antenna, it has not any contact resistance, please refer to connector spectation

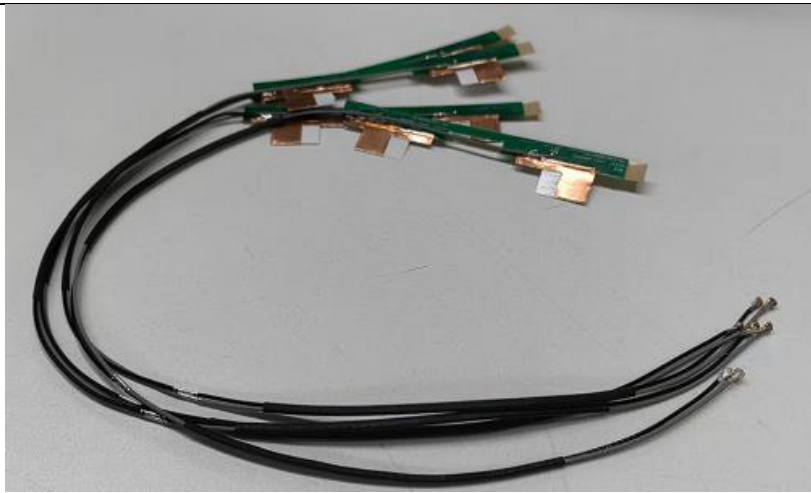
Judgment: OK

Inspector: 王紅麗

Approver: 吉金娟



3. Actual Picture

Before		
After		



High-temperature and humidity test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	No damage, corrosion, subsidence, scratches and other defects Electrical compliance with specifications		
Test Condition :	在40°C, 90~95%湿度里储藏96个时间及常温2个小时放置后没有机构·电气的异常 40°C, 90~95% 습도에서 96시간 저장 및 상온 2시간 방치 후 기구적·전기적 이상 없을 것		
Equipment :	Constant temperature and humidity equipment		

1. Result :

	Before test				After test							
	VSWR				VSWR				VSWR(Rate of change)			
	Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant	
	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz
	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	30 %	30%	30%	30%
1	2.4	1.98	2.49	1.54	2.15	2.12	2.32	1.47	25%	-14%	17%	7%
2	2.32	2.11	2.03	1.76	2.52	2.23	2.41	1.57	-20%	-12%	-38%	19%
3	2.59	2.45	2.63	1.68	2.63	2.41	2.63	1.56	-4%	4%	0%	12%
4	2.67	2.52	2.27	1.92	2.47	2.44	2.15	1.81	20%	8%	12%	11%
5	2.65	2.53	2.48	1.74	2.51	2.52	2.39	1.51	14%	1%	9%	23%

2. Result structure:

	Judgment criteria	Result
1	No damage, corrosion, subsidence, scratches and other defects	OK
2		OK
3		OK
4		OK
5		OK

Contact resistance : Because this is connector type antenna, it has not any contact resistance, please refer to connector spectation

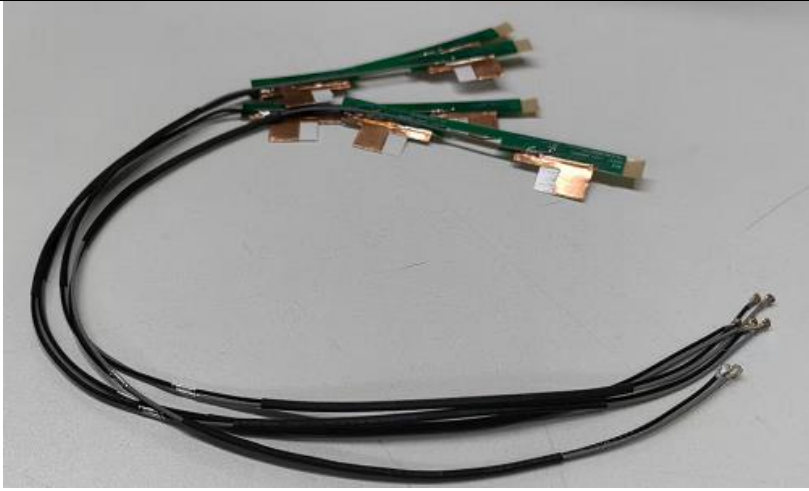
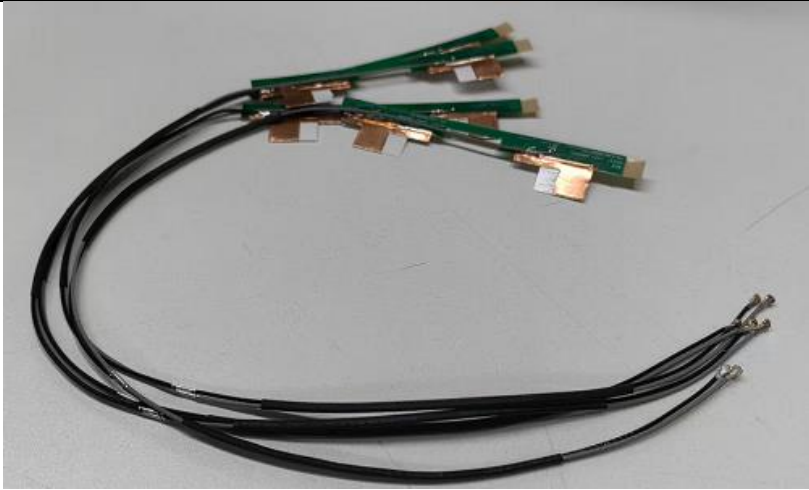
Judgment: OK

Inspector: 王紅麗

Approver: 吉金娟



3. Actual Picture

Before		
After		



Vibration test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	No damage, corrosion, subsidence, scratches and other defects Electrical compliance with specifications		
Test Condition :	Vibration Tester上固定天线后向X, Y, Z的每个方向认可5/150/5Hz (One Cycle), 振幅1.5mm, 加速度2G, 1octave/m的Sine波振动一个小时以后进行测试 내진동 시험기에 안테나 고정 후 주파수 5/150/5Hz, 진폭 1.5mm, 가속도 2G, 1Octave/m Sine파 진동을 X,Y,Z 각 3방향으로 1시간 인가 후 테스트 진행 함		
Equipment :	Vibration equipment (第三方测试)		

1. Result :

	Before test				After test							
	VSWR				VSWR				VSWR(Rate of change)			
	Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant	
	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75 G Hz	5.5G Hz	2.7 G Hz	5.7G Hz	2.75G Hz	5.5G Hz
	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	30 %	30%	30%	30%
1	2.19	1.98	2.49	1.54	2.15	2.12	2.32	1.47	4%	-14%	17%	7%
2	2.32	2.11	2.03	1.76	2.52	2.23	2.21	1.57	-20%	-12%	-18%	19%
3	2.51	2.45	2.63	1.68	2.53	2.41	2.58	1.56	-2%	4%	5%	12%
4	2.49	2.52	2.27	1.99	2.47	2.44	2.15	1.81	2%	8%	12%	18%
5	2.58	2.53	2.48	1.65	2.51	2.52	2.39	1.51	7%	1%	9%	14%

2. Result structure:

	Judgment criteria	Result
1	No damage, corrosion, subsidence, scratches and other defects	OK
2		OK
3		OK
4		OK
5		OK

Contact resistance : Because this is connector type antenna, it has not any contact resistance, please refer to connector spectation

Judgment: OK

Inspector: 王紅麗

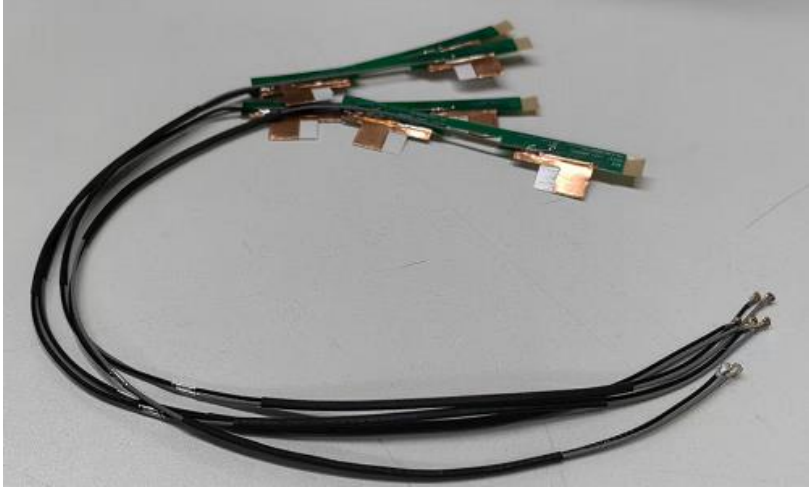
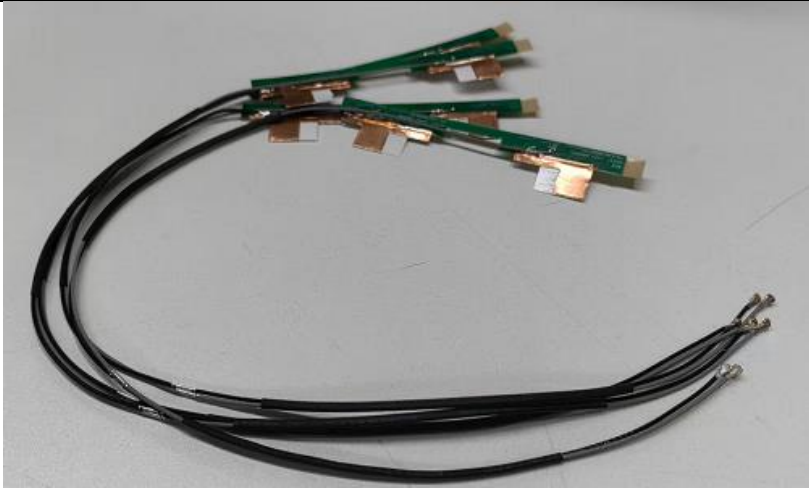


Approver: 吉金娟

QE NO:
D

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I-FM-10-95

3. Actual Picture

Before		
After		



Drop test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	No crack, damaged parts		
Test Condition :	把主机在100cm高度上掉落到厚度5mm以上的铁板上，1棱，3角，6面各个1次，一共实施10次 본체를 100cm 높이에서 철판(두께 5mm 이상) 바닥위에 1모/3각/6면 각각 1회, 총 10회 실시		
Equipment :	Drop test equipment		

Result :

	Before test				After test				
	VSWR				VSWR				Appearance
	Black cable Ant		Gray cable Ant		Black cable Ant		Gray cable Ant		
	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	≤3	≤4.5	OK/NO
	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	2.7G Hz	5.7G Hz	2.75G Hz	5.5G Hz	
1	2.2	1.96	2.28	1.7	2.33	2.02	2.33	1.65	OK
2	2.46	2.32	2.32	1.77	2.63	2.33	2.49	1.75	OK
3	2.36	2.55	2.35	1.76	2.41	2.45	2.45	1.77	OK
4	2.21	1.95	2.84	1.86	2.41	2.15	2.66	1.63	OK
5	1.98	2.22	2.39	1.57	2.15	2.71	2.45	1.75	OK

Contact resistance: Because this is connector type antenna, it has not any contact resistance, please refer to connector spectation

Judgment: OK

Inspector: 王紅麗

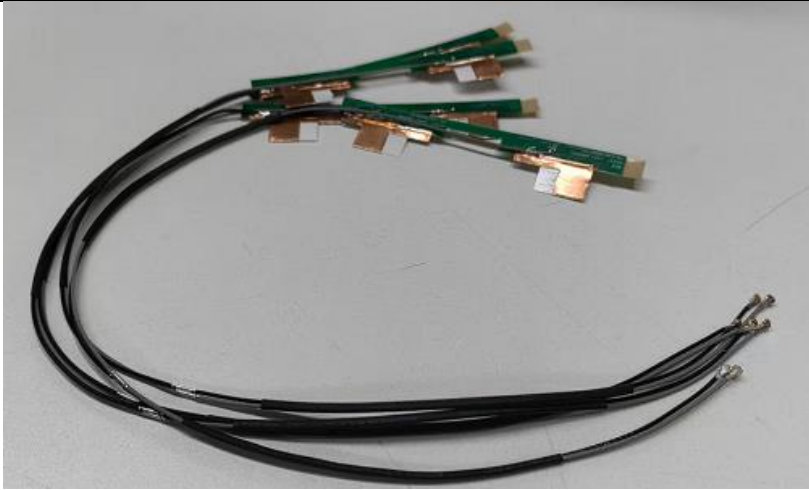
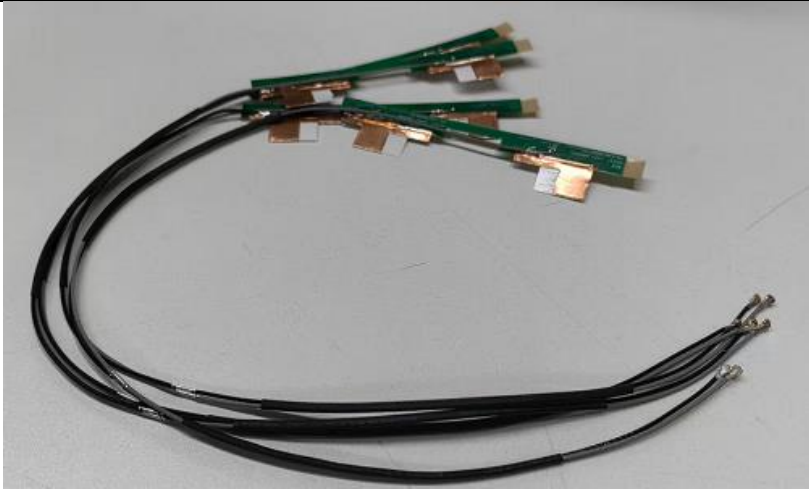


Approver: 吉金娟

QE NO:
D

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I-FM-10-95

- Actual Picture

Before		
After		



PAD tensile force test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	PAD tensile force $\geq$ 0.3kgf		
Test Condition :	Pull the cable from FPCB vertically		
Equipment :	Tensile testing equipment		

Result :

试验前																																									
试验后	 <table><thead><tr><th>灰线</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr></thead><tbody><tr><td>PAD 拉力$\geq$0.3kgf</td><td>0.92</td><td>0.78</td><td>0.88</td><td>0.91</td><td>0.82</td></tr><tr><td>端子拉力$\geq$1.2kgf</td><td>1.92</td><td>1.77</td><td>1.85</td><td>1.721</td><td>1.81</td></tr><tr><th>黑线</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr><tr><td>PAD 拉力$\geq$0.3kgf</td><td>0.76</td><td>0.69</td><td>0.82</td><td>0.79</td><td>0.77</td></tr><tr><td>端子拉力$\geq$1.2kgf</td><td>1.75</td><td>1.63</td><td>1.55</td><td>1.47</td><td>1.69</td></tr></tbody></table>					灰线	1	2	3	4	5	PAD 拉力 $\geq$ 0.3kgf	0.92	0.78	0.88	0.91	0.82	端子拉力 $\geq$ 1.2kgf	1.92	1.77	1.85	1.721	1.81	黑线	1	2	3	4	5	PAD 拉力 $\geq$ 0.3kgf	0.76	0.69	0.82	0.79	0.77	端子拉力 $\geq$ 1.2kgf	1.75	1.63	1.55	1.47	1.69
灰线	1	2	3	4	5																																				
PAD 拉力 $\geq$ 0.3kgf	0.92	0.78	0.88	0.91	0.82																																				
端子拉力 $\geq$ 1.2kgf	1.92	1.77	1.85	1.721	1.81																																				
黑线	1	2	3	4	5																																				
PAD 拉力 $\geq$ 0.3kgf	0.76	0.69	0.82	0.79	0.77																																				
端子拉力 $\geq$ 1.2kgf	1.75	1.63	1.55	1.47	1.69																																				

Judgment: OK

Inspector: 王紅麗

Approver: 吉金娟



Connector un-mating force test

Product Type:	WA-P-LELE-04-085		
Lot No.:	N/A	Sample Size:	5 pcs
Judgment Criteria:	端子拉力 $\geq 0.70\text{kgf}$		
Test Condition :	端子拉力 $\geq 0.70\text{kgf}$		
Equipment :	Tensile testing equipment		

Result :

Result

试验前																						
试验后	 <table border="1" data-bbox="268 1373 1153 1520"><thead><tr><th>编号</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr></thead><tbody><tr><td rowspan="2">端子拉力$\geq 0.7\text{kgf}$</td><td>1.11</td><td>1.03</td><td>1.21</td><td>1.03</td><td>1.13</td></tr><tr><td>1.23</td><td>1.11</td><td>0.96</td><td>1.03</td><td>1.05</td></tr></tbody></table>					编号	1	2	3	4	5	端子拉力 $\geq 0.7\text{kgf}$	1.11	1.03	1.21	1.03	1.13	1.23	1.11	0.96	1.03	1.05
编号	1	2	3	4	5																	
端子拉力 $\geq 0.7\text{kgf}$	1.11	1.03	1.21	1.03	1.13																	
	1.23	1.11	0.96	1.03	1.05																	

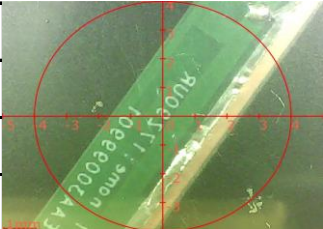
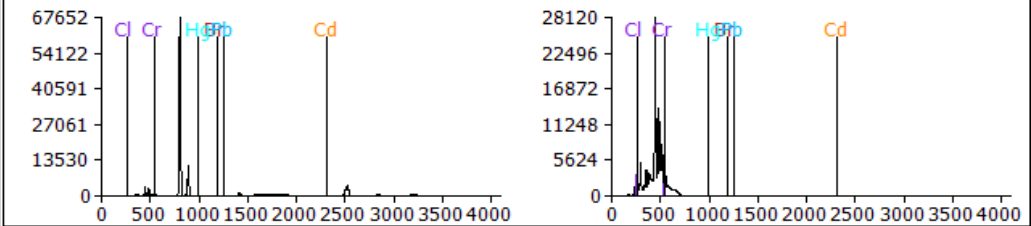
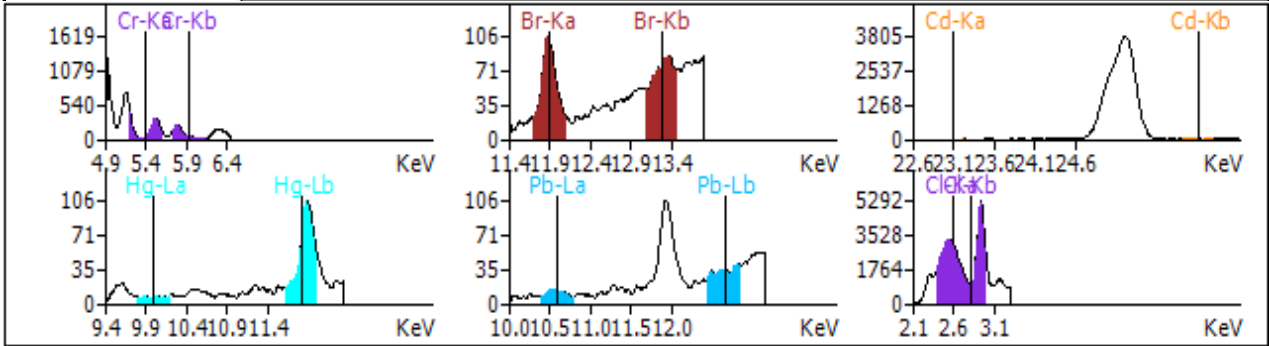
Judgment: OK

Inspector: 王紅麗

Approver: 吉金娟

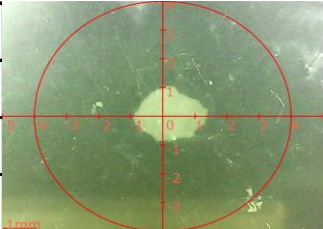
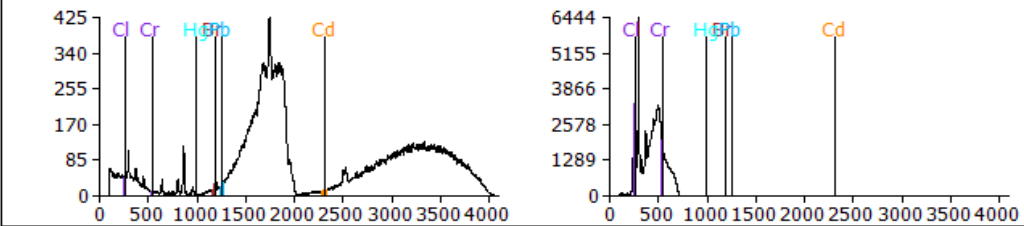
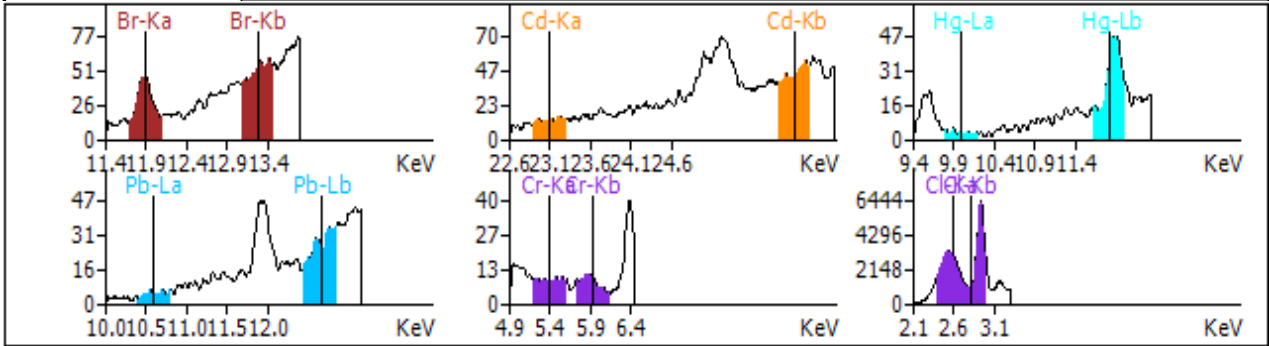
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

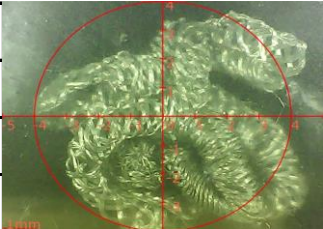
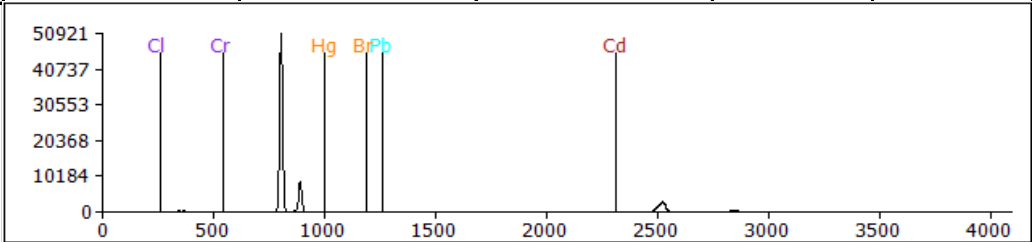
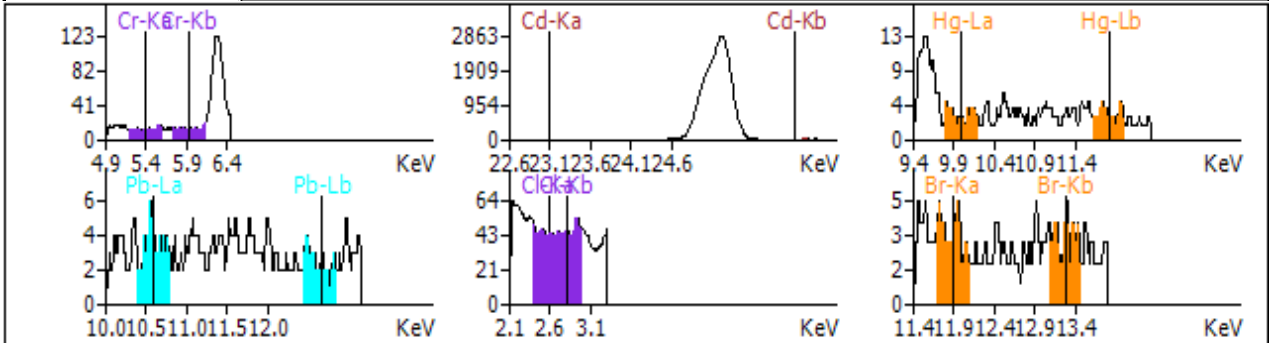
样品名称 Sample Name	(板材)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 9:32:24	工作曲线 WorkCurve	复合材料 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	400	Pass
氯(Cl)	17.735	174.455	0.783	630	Pass
溴(Br)	0.00653	18.782	0.366	250	Pass
镉(Cd)	0	ND	0.000	38	Pass
汞(Hg)	0	ND	0.000	400	Pass
铅(Pb)	0.0003	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

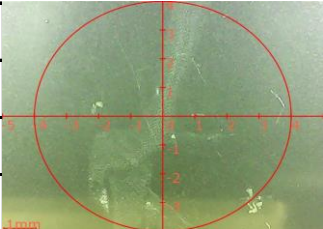
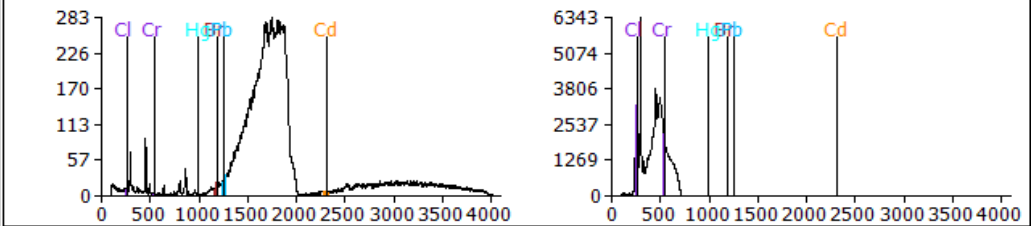
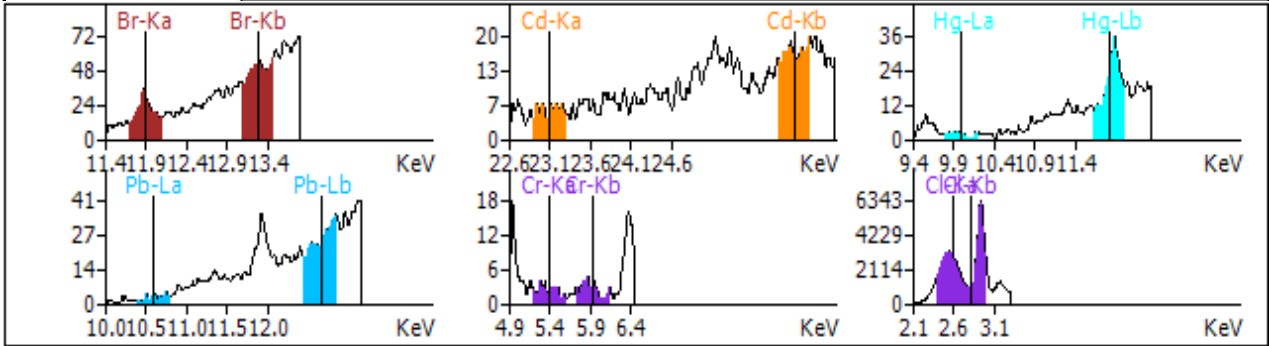
样品名称 Sample Name	(背胶)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 11:21:53	工作曲线 WorkCurve	塑料材质 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	560	Pass
氯(Cl)	17.795	175.813	0.796	630	Pass
溴(Br)	0.00418	9.995	0.271	300	Pass
镉(Cd)	0.00052	ND	0.043	50	Pass
汞(Hg)	0	ND	0.000	560	Pass
铅(Pb)	0.00005	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

全分析报告
Total Analysis Report

样品名称 Sample Name	(编织网)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 11:49:13	工作曲线 WorkCurve	BRASS-ZINC		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	560	Pass
氯(Cl)	0.00075	ND	0.000	630	Pass
溴(Br)	0.00006	ND	0.000	300	Pass
镉(Cd)	0	ND	0.000	50	Pass
汞(Hg)	0	ND	0.000	560	Pass
铅(Pb)	0	ND	0.000	28000	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

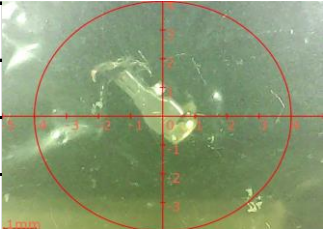
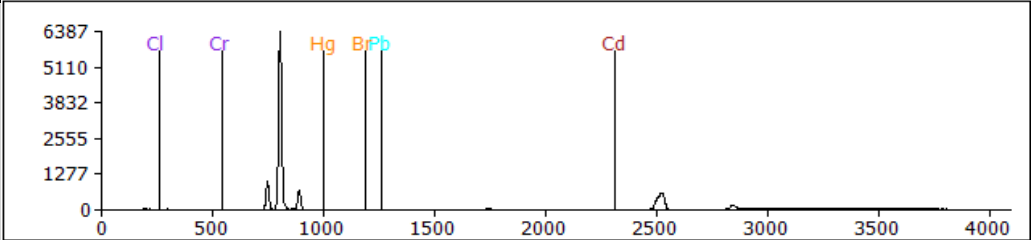
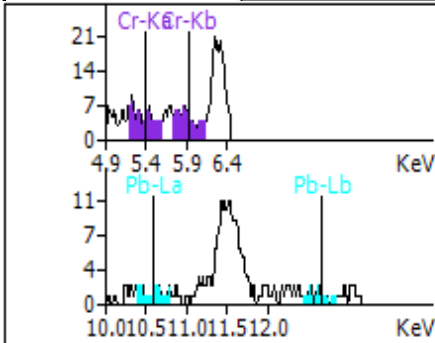
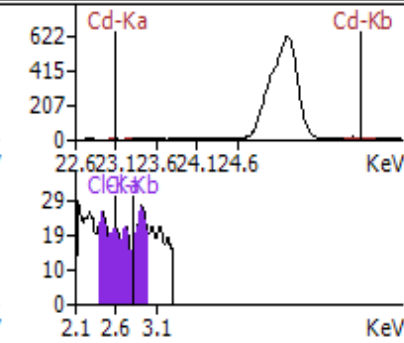
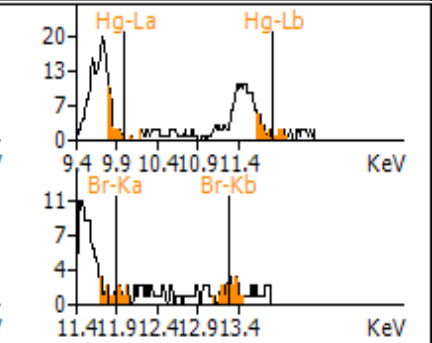
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(醋酸布)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 11:11:50	工作曲线 WorkCurve	塑料材质 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	560	Pass
氯(Cl)	19.1	205.347	0.942	630	Pass
溴(Br)	0.0028	6.690	0.214	300	Pass
镉(Cd)	0.0004	ND	0.000	50	Pass
汞(Hg)	0.00012	ND	0.140	560	Pass
铅(Pb)	0	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

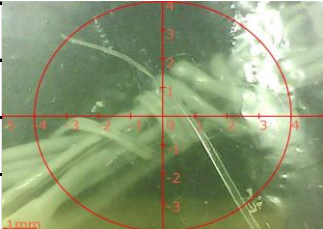
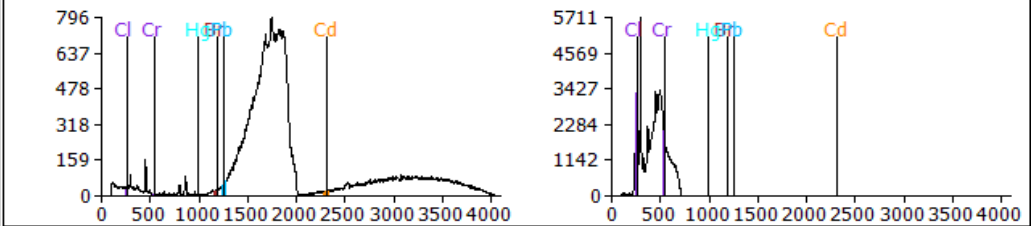
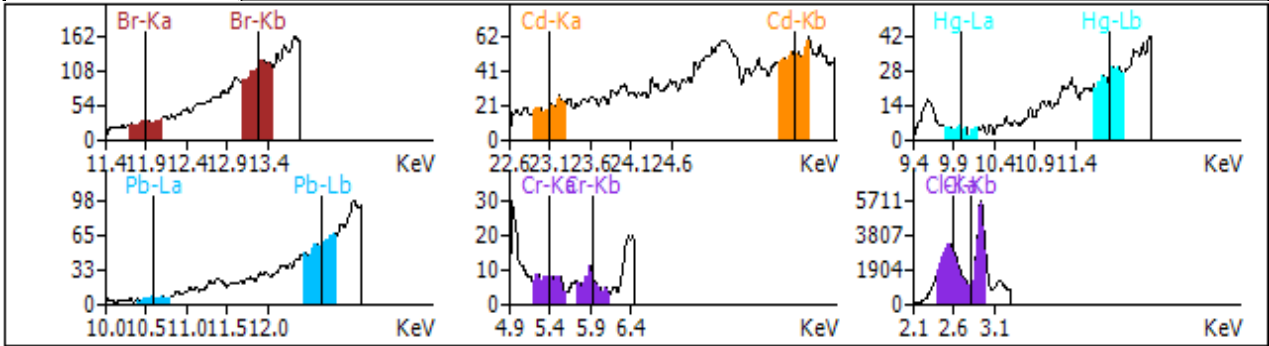
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(端子)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 13:19:32	工作曲线 WorkCurve	BRASS-ZINC		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0.00002	ND	0.000	560	Pass
氯(Cl)	0.00186	ND	0.000	630	Pass
溴(Br)	0.00012	ND	0.000	300	Pass
镉(Cd)	0	ND	0.000	50	Pass
汞(Hg)	0	ND	0.000	560	Pass
铅(Pb)	0	ND	0.000	28000	Pass
谱图					
	  				
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

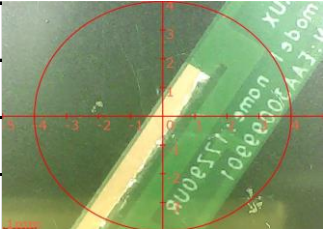
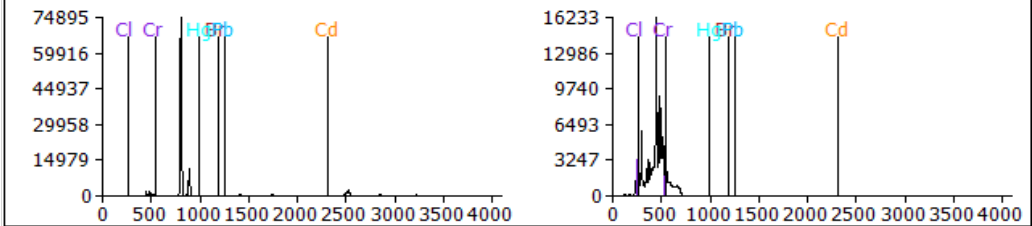
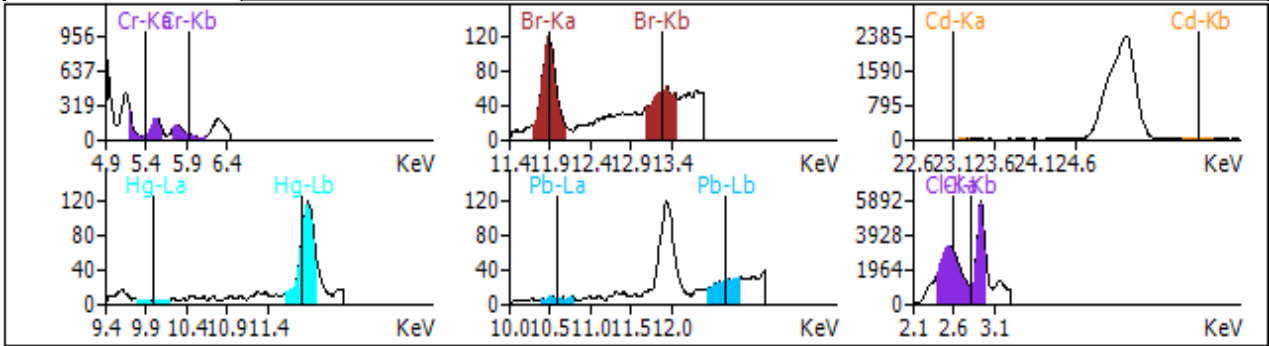
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(灰外皮)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 10:48:06	工作曲线 WorkCurve	塑料材质 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	560	Pass
氯(Cl)	18.045	181.471	0.828	630	Pass
溴(Br)	0.00013	ND	0.007	300	Pass
镉(Cd)	0.00009	ND	0.000	50	Pass
汞(Hg)	0.00009	ND	0.062	560	Pass
铅(Pb)	0	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

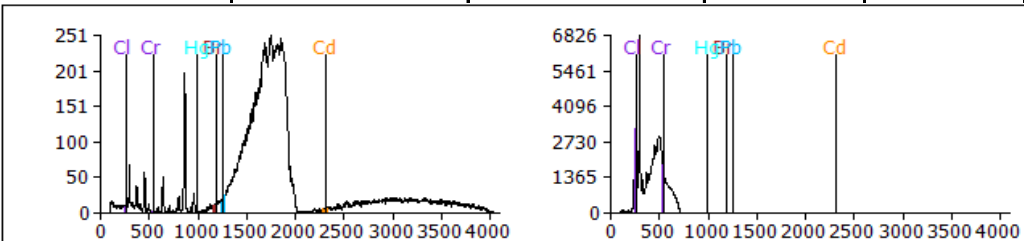
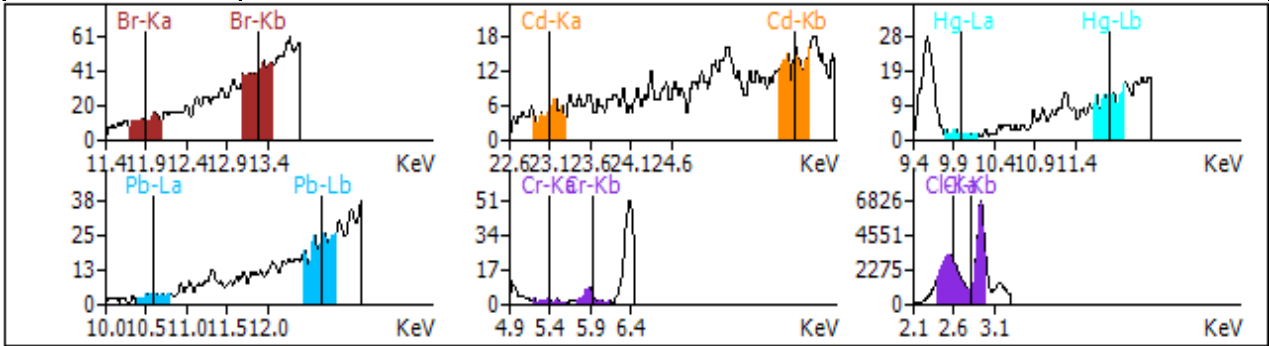
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(金手指)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 9:43:15	工作曲线 WorkCurve	复合材料 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差(ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	400	Pass
氯(Cl)	17.38	166.421	0.754	630	Pass
溴(Br)	0.01192	35.588	0.685	250	Pass
镉(Cd)	0.00017	ND	0.000	38	Pass
汞(Hg)	0	ND	0.000	400	Pass
铅(Pb)	0.00043	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

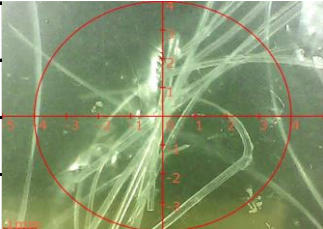
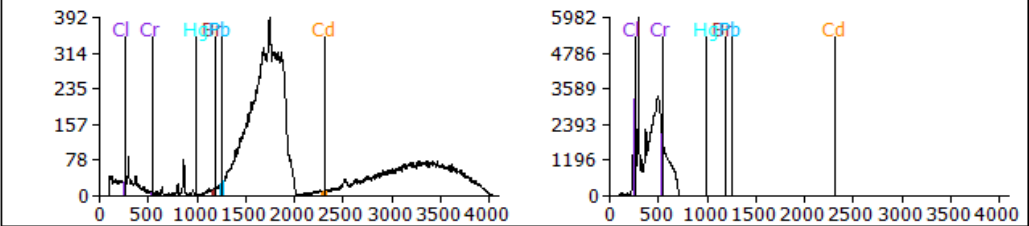
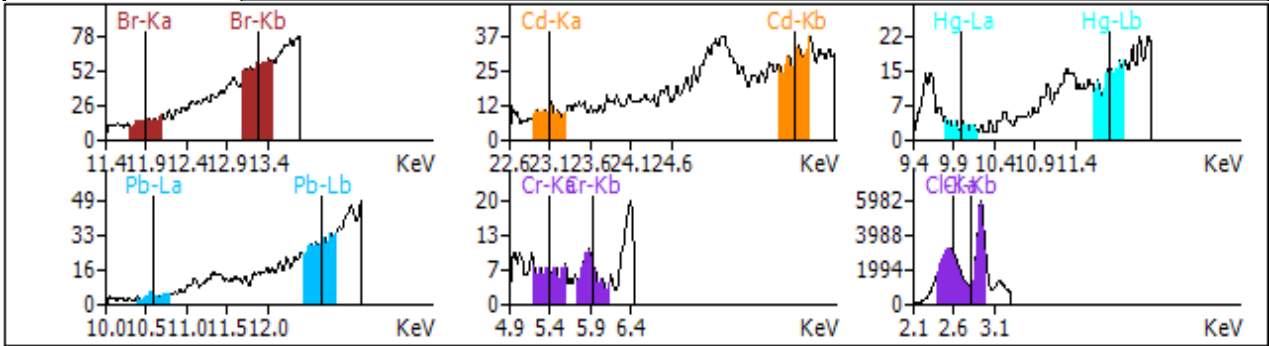
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(套管)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 10:57:05	工作曲线 WorkCurve	塑料材质 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0.00007	ND	0.263	560	Pass
氯(Cl)	17.235	163.140	0.750	630	Pass
溴(Br)	0	ND	0.000	300	Pass
镉(Cd)	0	ND	0.000	50	Pass
汞(Hg)	0.00008	ND	0.058	560	Pass
铅(Pb)					
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

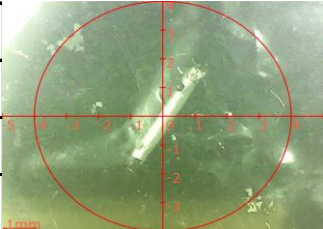
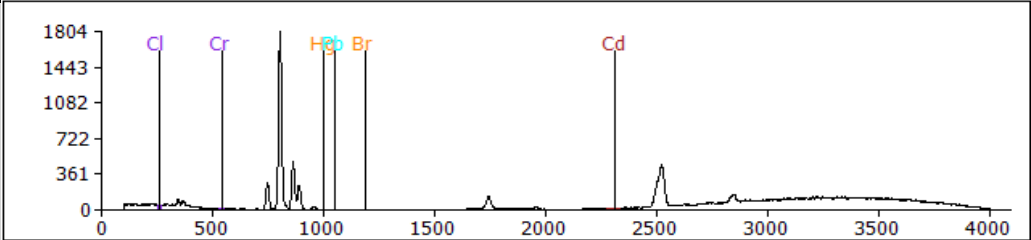
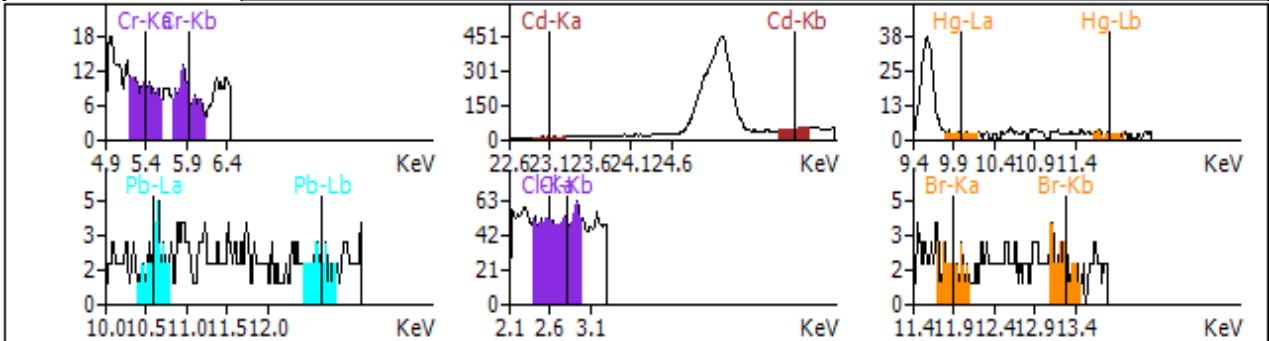
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(铁氟龙)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 10:30:42	工作曲线 WorkCurve	塑料材质 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	560	Pass
氯(Cl)	18.77	197.878	0.904	630	Pass
溴(Br)	0.00015	ND	0.012	300	Pass
镉(Cd)	0.00051	ND	0.016	50	Pass
汞(Hg)	0	ND	0.000	560	Pass
铅(Pb)	0.0003	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

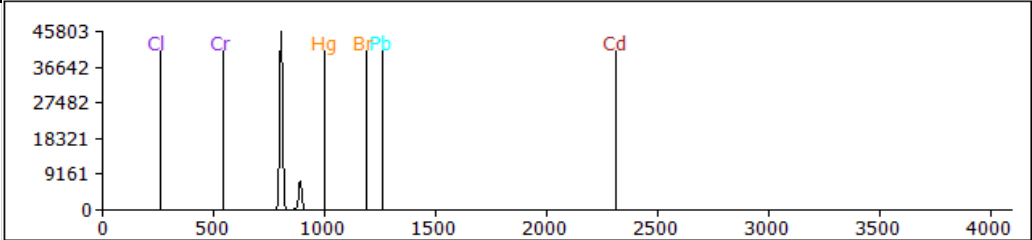
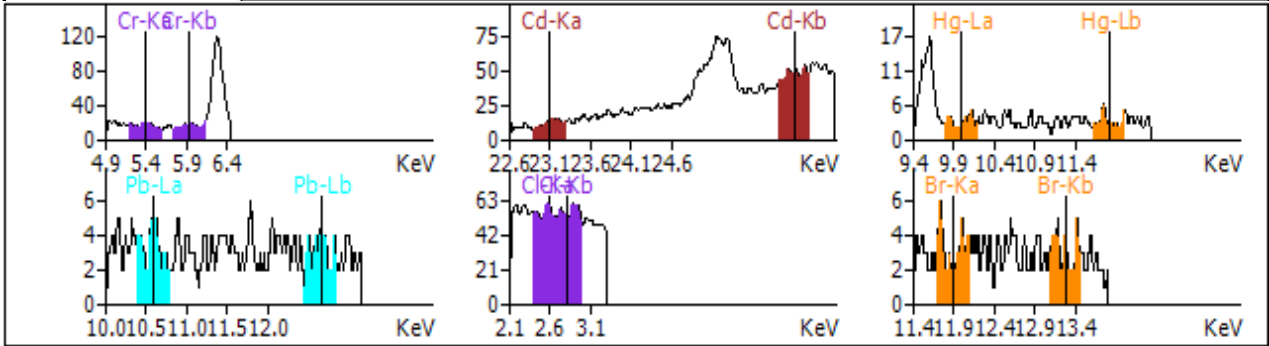
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(铁件)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 13:24:19	工作曲线 WorkCurve	Fe		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0.00002	ND	0.000	560	Pass
氯(Cl)	0.00006	ND	0.000	630	Pass
溴(Br)	0	ND	0.000	300	Pass
镉(Cd)	0	ND	0.000	50	Pass
汞(Hg)	0.00004	ND	0.000	560	Pass
铅(Pb)	0.00014	ND	0.000	2450	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

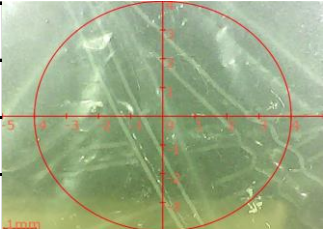
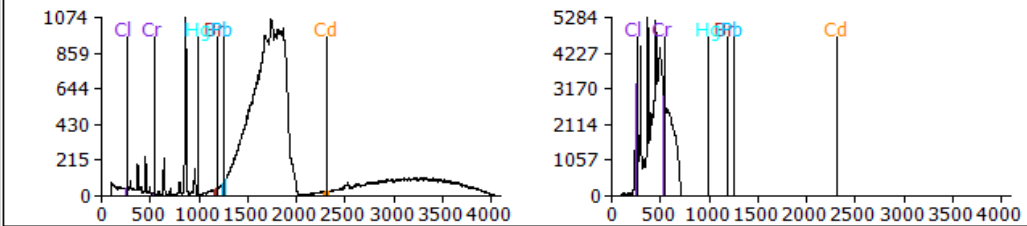
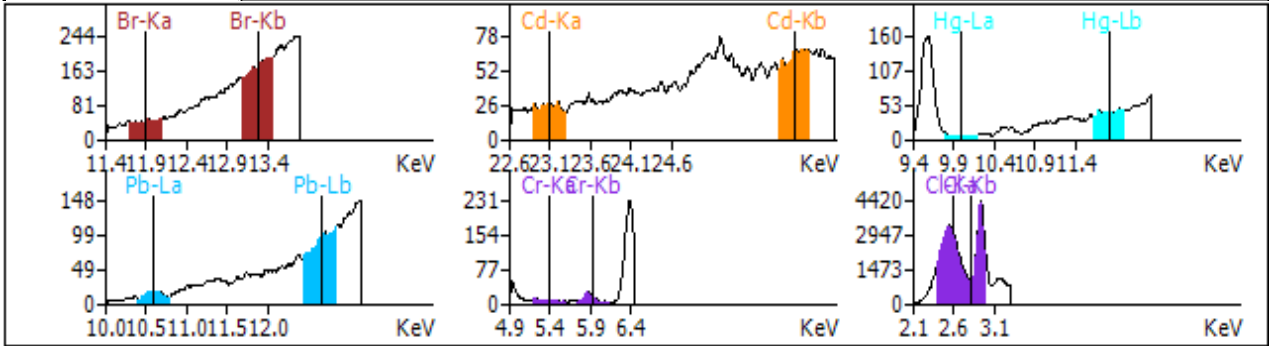
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(铜箔)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 13:02:07	工作曲线 WorkCurve	BRASS-ZINC		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0.00004	ND	0.000	560	Pass
氯(Cl)	0.00112	ND	0.000	630	Pass
溴(Br)	0.00005	ND	0.000	300	Pass
镉(Cd)	0	ND	0.000	50	Pass
汞(Hg)	0	ND	0.000	560	Pass
铅(Pb)	0.00003	ND	0.000	28000	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBb，PBDE超标。					
备注：					

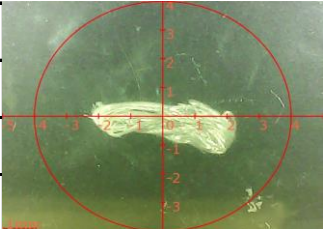
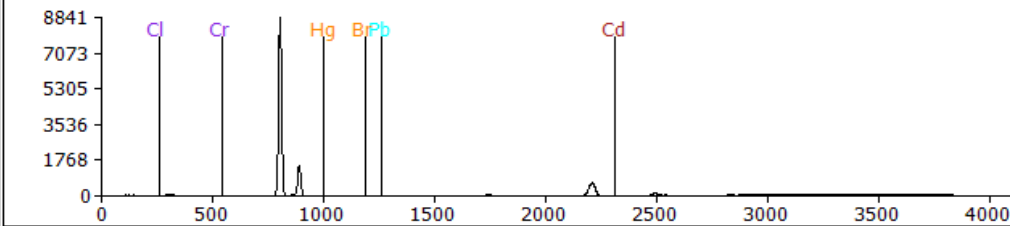
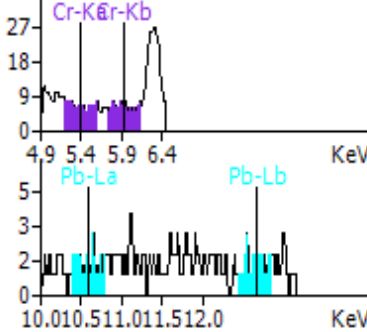
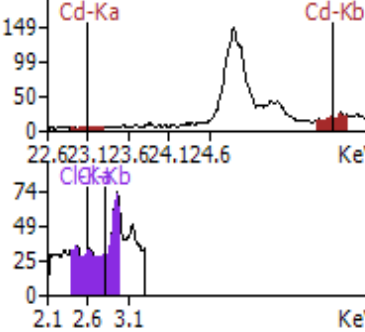
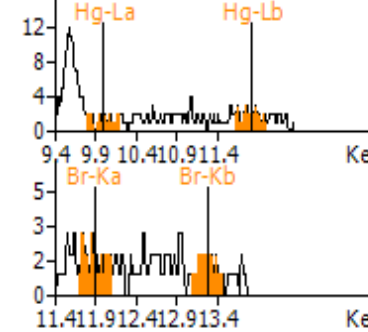
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(外皮)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 9:54:01	工作曲线 WorkCurve	塑料材质 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0.00004	ND	0.000	560	Pass
氯(Cl)	20.915	246.421	1.111	630	Pass
溴(Br)	0	ND	0.000	300	Pass
镉(Cd)	0.00018	ND	0.000	50	Pass
汞(Hg)	0.00002	ND	0.000	560	Pass
铅(Pb)	0	ND	0.000	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

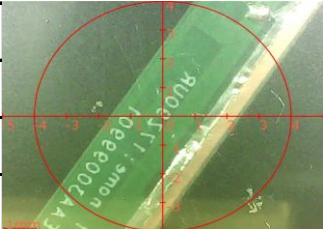
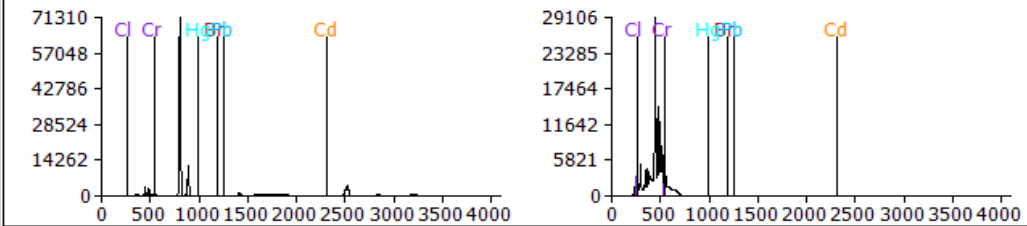
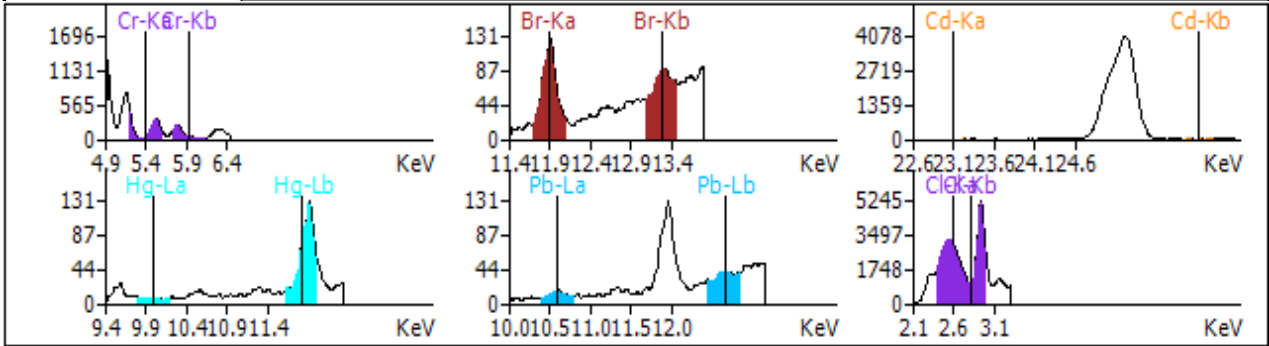
江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	(芯线)				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 13:08:15	工作曲线 WorkCurve	BRASS-ZINC		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	560	Pass
氯(Cl)	0.00217	ND	0.000	630	Pass
溴(Br)	0.00012	ND	0.000	300	Pass
镉(Cd)	0	ND	0.000	50	Pass
汞(Hg)	0.00004	ND	0.000	560	Pass
铅(Pb)	0.00003	ND	0.000	28000	Pass
谱图					
	 Cr-Kα-Kβ Pb-Lα Pb-Lβ  Cd-Kα Cd-Kβ Cl-Kα-Kβ  Hg-Lα Hg-Lβ Br-Kα Br-Kβ				
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

江苏天瑞仪器有限公司
Skyray Instrument

全分析报告
Total Analysis Report

样品名称 Sample Name	油墨				
测量时间 Test Time	200 (s)				
操作员 Operator	许春艳				
测量日期 Test Date	2025/7/10 9:22:58	工作曲线 WorkCurve	复合材料 WorkCurveCl		
元素 Element	强度 Intensity	含量 Content	误差 (ppm) Error (ppm)	限定标准 Limits	判定 Results
铬(Cr)	0	ND	0.000	400	Pass
氯(Cl)	18.32	187.694	0.842	630	Pass
溴(Br)	0.00704	20.395	0.373	250	Pass
镉(Cd)	0.00113	19.471	0.377	38	Pass
汞(Hg)	0	ND	0.000	400	Pass
铅(Pb)	0.00067	2.175	0.052	50	Pass
谱图					
					
注： ND代表含量小于等于2ppm					
X荧光仪器分析测得的数据为表面测试					
Cr, Br为测得该元素的总含量，如果其显示超标并不代表VI价Cr和PBB，PBDE超标。					
备注：					

Quantity of packaging			Spec(mm)			Packing material	Remark
Quantity of Carton	Quantity of Inner box	Quantity of PE Bag	Carton	Inner box	PE Bag	PE Bag	
1200PCS	300 PCS	1PCS	415*395*305mm	390*275*90mm	120*180mm		
As shown in the figure							
Package description - Put 1 pcs products to a PE bag. - Put 700 PCS PE bag to an inner box. - Put 4 inner boxes to a outer carton							

1. Put 1 pcs products to a PE bag.
2. Put 700 PCS PE bag to an inner box.
3. Put 4 inner boxes to a outer carton

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OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY INPAQ

Reversion	Engineering Change Description	Date	Owner
P0	First release	2025/06/26	Bruce
P1	尺寸调整	2025/07/07	Monroe

正面

离形拉手

离形纸面

RoHS 2.0 要求:
镉, Cd
汞, Hg
铅, Pb
六价铬, Cr (VI)
多溴联苯, PBBs
多溴二苯醚, PBDEs
邻苯二甲酸二 (2-乙基己基) 酯
邻苯二甲酸甲苯基丁酯
邻苯二甲酸二丁基酯
邻苯二甲酸二异丁酯
管控标准: 参照《I-WI-21-01 HSF技術標準》

HSP要求:
BR
CL
BR+CL
管控标准: 参照《I-WI-21-01 HSF技術標準》

TSCA
管控标准: 参照《I-WI-21-01 HSF技術標準》

- Note:**
1. 类型: 3M467, 厚度: T=0.05mm,
2. 未经允许不可随意替换材料
3. 工程圖上“#”为CPK 控制尺寸, “*”號為入料检验尺寸, “□”球标为全尺寸標註指示。
4. 产品符合RoHS2.0+HF+TSCA+REACH要求, 符合禾邦《I-WI-21-01 HSF 技術標準》。

INDEX	PART No.	DESCRIPTION	MATERIAL	Q'TY
PARTS LIST				

SELECT	√				CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE	
SPEC. CLASS	A	B	C	D		
< 8mm	0.05	0.1	0.1	0.2	DRAWN	Monroe
8-25mm	0.08	0.15	0.15	0.3		DESIGNED
25-80mm	0.12	0.2	0.25	0.4	APPROVED	Steven
80-250mm	0.25	0.3	0.4	0.5		 3RD ANGLE
ANGLE	1.0					
MATERIAL:	SEE NOTE					
FINISH:	SEE NOTE					



SIZE
A4

禾邦电子 (苏州) 有限公司
INPAQ Technology Co.,Ltd.

TAP 3M467 75.6x5.2mm

PART No.:200001018122	DWG.No.:MIS2000080090
UNIT MM	SCALE: 1:1 SHEET 1 OF 1



MATERIAL Composition

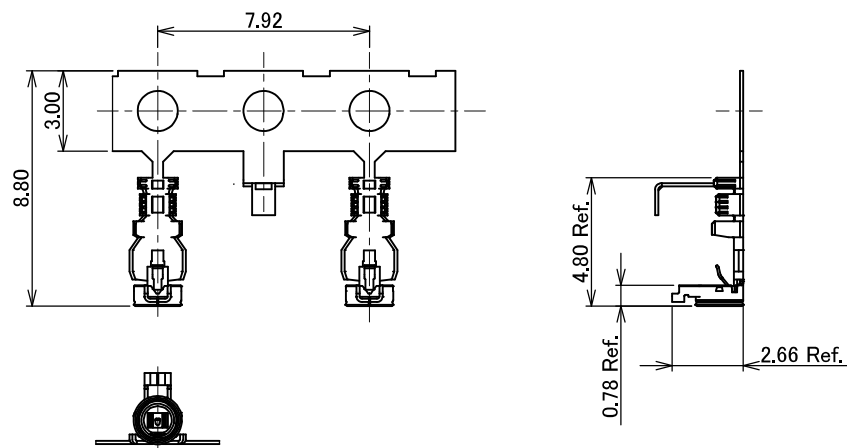
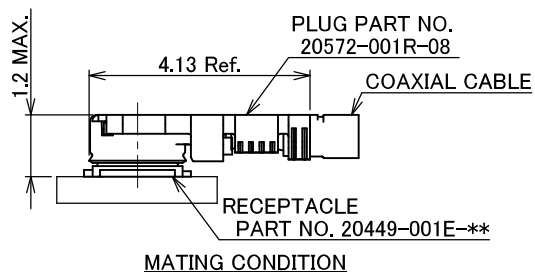
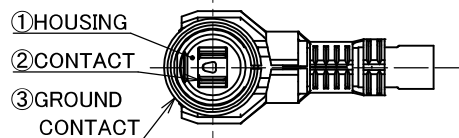
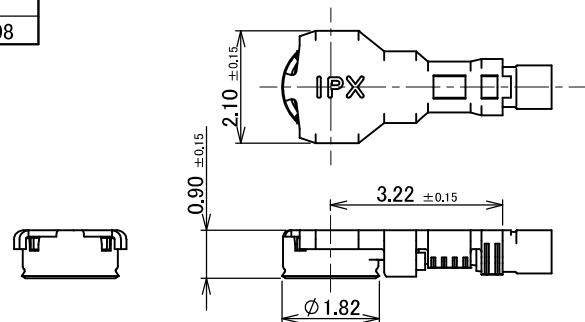
Product Name 產品名稱：3M467
Date日期：2022-12-05

Composition part 構成部件	Homogeneous Material Name. 組成部件均質材料名稱	Raw Material Manufacturer Name 原材料廠商名稱	Element name composition 構成之元素名稱	CAS No. CAS號碼	Substance Mass(mg) 物質重量(毫克)		ICP Test Report No. 檢測報告編號	ICP TEST Date 檢測報告日期	Test Result 測試結果												EU RoHS Exemption 歐盟RoHS豁免項		ICP Test Report 檢測報告	SDS Report 物質安全 資料表
					mass(mg) 重量(毫克)	% 百分比			Unit : ppm 單位: ppm												no need to fill in if not applicable 如不適用，則無需填寫			
背胶	3M467	3M公司	Acrylic acid	79-10-7	45.0000	36.00%	SHAEC2213340601 SHAEC2213340602	22.09.15	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	208		YES	YES	
离型纸	离型纸	HoTEch	原纸	-	80.0000	64.00%	SHAEC22002372919	22.10.20	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d	n.d		YES	YES		
			PE	9002-88-4																				
			硅油	63148-62-9																				
Total mass (mg) 總品質（毫克）					125.0000	100%																		

Approved by 批准：毛金华 Reviewed by 審核者： 吴蕾 Initiated by填寫人：刘小兰

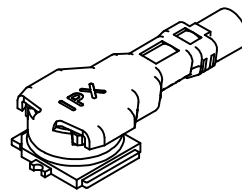
PART NO.

20572-001R-08

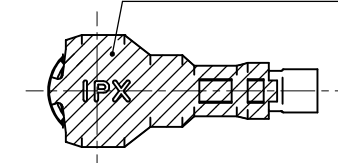


CARRIER CONDITION

S = 5:1



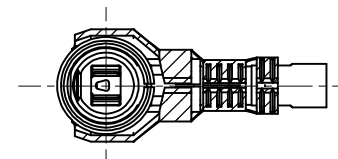
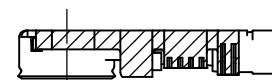
HATCHED AREA: Ni PLATING AREA



Halogen Free



RoHS Compliant



NOTES.

1. APPLICABLE CONNECTOR

20449-001E-**

20579-001E-**

2. MATING AND UNMATING INSTRUCTION

2-1. MATING

MATE THE CONNECTOR VERTICALLY AS MUCH AS POSSIBLE, ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. DO NOT SLANT MATE.

2-2. UNMATING INSTRUCTION

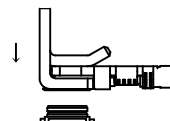
2-2-1. IN CASE OF UNMATING BY PULLING TOOL (PART NO. 90609-0001)

USE THE PULLING TOOL AS THE FOLLOWING DRAWING, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.

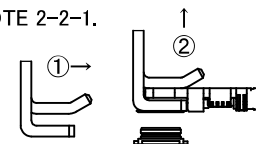
2-2-2. IN CASE OF UNMATING DIRECTLY BY HAND

CATCH THE CATCHING AREA OF PLUG, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.

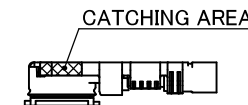
NOTE 2-1.



NOTE 2-2-1.



NOTE 2-2-2.



3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.05 μ m MIN. [Ni PLATING AREA] Ni ONLY
2	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.10 μ m MIN.
1	HOUSING	PBT	UL94V-0, BLACK
NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS

7	Z220592	K.W	2022/05/30	Y.H	ANGLE	±2°	6 OVER 30 MAX.	±0.3		SERIES No. R3	CUSTOMER COPY		
6	Z201194	TOI	2020/11/18	M.T	6 MAX.	±0.2	30 OVER 120 MAX.	±0.5					
5	Z200934	TOI	2020/09/08	M.T	GENERAL TOLERANCE.				TITLE MHF® 4L PLUG Ni TOP (0.81, 0.64)		SCALE	I-PEX	
4	Z191019	Haji	2019/08/01	Y.S	DWG.	DATE	S.Suzuki	2013/10/03			10:1		
3	Z180749	M.N	2018/11/08	Ken	CHK.	DATE	K.Yotsutani	2013/10/03			UNIT		
2	Z150075	S.S	2015/01/23	Tom	APP.	DATE	T.Takano	2013/10/03			mm		
REV.	ECN	BY	DATE	APP.					DWG. No.	20572	SIZE	SHEET	REV.
REVISION RECORD					T.Takano				2013/10/03		A3	1/5	7

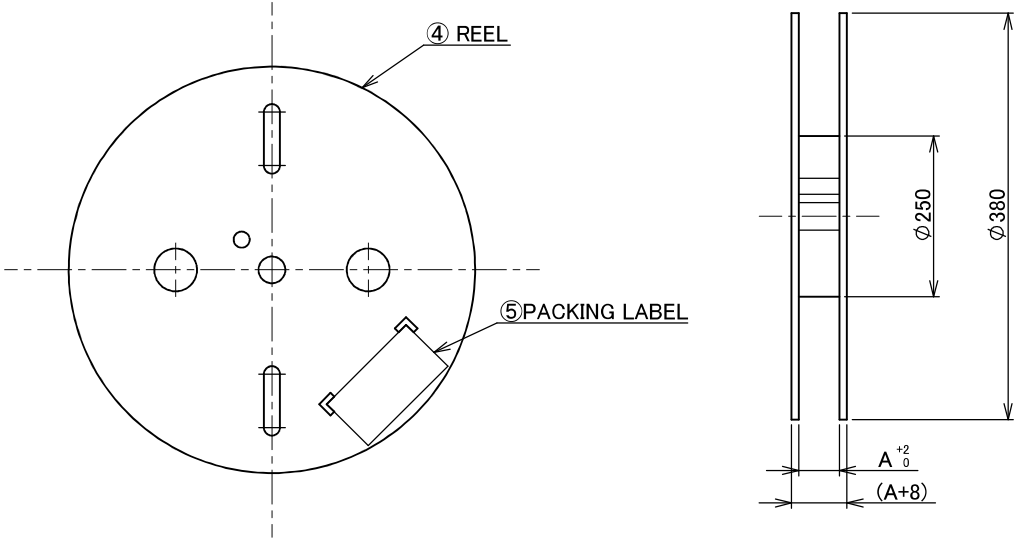
ITEMS	SPECIFICATION	
APPLICABLE CABLE	AWG#36 (0.81 O.D.)	AWG#36 (0.64 O.D.)
RECOMMENDED CONNECTOR PART No.	20449-001E-***	
RATING VOLTAGE	60 V AC (R.M.S)	
RATING FREQUENCY	DC~12 GHz	
OPERATING TEMPERATURE	233~363K (-40°C~+90°C)	
VSWR (MATED WITH SMA ADAPTER PART No. 90449-001)	1.30 MAX. AT 0.1~3 GHz, 1.45 MAX. AT 3~6 GHz, 1.60 MAX. AT 6~9 GHz, 1.90 MAX. AT 9~12 GHz	
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: $\angle$ R 20 mohm MAX.	
GROUND CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: $\angle$ R 20 mohm MAX.	
INSULATION RESISTANCE	INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.	
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC, 1 MINUTE	
DURABILITY	30 CYCLES	
MATING FORCE (INITIAL / AFTER TEST)	INITIAL: 30 N MAX. / AFTER TEST: 30 N MAX.	
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL: 20 N MAX. 5 N MIN. / AFTER TEST: 20 N MAX. 3 N MIN.	
CRIMP STRENGTH	-	8 N MIN.
PRODUCT SPECIFICATION	PRS-1772	PRS-1944
TEST REPORT	TR-13011	TR-14078
PACKING STANDARD	PST-12066	
INSTRUCTION MANUAL	HIM-12011	
APPEARANCE CRITERIA No.	QLS-A***	

ANGLE	±2°	6 OVER 30 MAX.	±0.3		SERIES No. R3	CUSTOMER COPY			
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5						
GENERAL TOLERANCE,				TITLE MHF® 4L PLUG Ni TOP (0.81, 0.64)		SCALE	I-PEX		
DWG.	DATE					—			
CHK.						UNIT			
APP.						mm			
				DWG. No.	20572	SIZE	SHEET	REV.	
						A3	2/5	7	

PART NO.		20572-001R-08				
APPLICABLE CABLE STRIP DIMENSION						
	※DO NOT USE SOLDER COATED EITHER INNER OR OUTER CONDUCTOR CABLES.		※DO NOT USE SOLDER COATED EITHER INNER OR OUTER CONDUCTOR CABLES.			
	NOTES 3.REQUIREMENTS CHARACTERISTIC IMPEDANCE: 50(±3)ohm BY TDR METHOD NOMINAL CAPACITANCE (REFERENCE VALUE): 96pF/m CONDUCTOR RESISTANCE OF INNER CONDUCTOR AT 293 (REFERENCE): OD 0.81 TYPE/OD 0.64 TYPE...1400ohm/km INSULATION RESISTANCE: OD 0.81 TYPE/OD 0.64 TYPE... 1000Mega-ohm.km MIN. DIELECTRIC WITH STANCE VOLTAGE: OD 0.81 TYPE...NO BREAKDOWN AT AC 1500V FOR 1 MINUTES. OD 0.64 TYPE...NO BREAKDOWN AT AC 500V FOR 1 MINUTES.					
BRAIDED SHIELD OF OUTER CONCUCTOR	SINGLE BRAIDED SHIELD		SINGLE SPIRAL SHIELD			
PART NO. OF SEMI AUTO TERMINATION MACHINE	90599-008		90599-006			
CRIMP HEIGHT						
	CH-1 (i-Fit® PART) 0.83~0.87	CH-2 (SHIELD PART) 0.76~0.80	CH-3 (JACKET PART) 0.92~0.96	CH-1 (i-Fit® PART) 0.81~0.85	CH-2 (SHIELD PART) 0.73~0.77	CH-3 (JACKET PART) 0.71~0.75
	※USE FOR POINT MICROMETER.			※USE FOR POINT MICROMETER.		

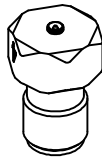
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6 MAX.	±0.2	30 OVER 120 MAX.	±0.5				
GENERAL TOLERANCE.				TITLE		SCALE	
DWG.	DATE			MHF® 4L PLUG Ni TOP (0.81, 0.64)		—	
CHK.						UNIT	
APP.				DWG. No. 20572		mm	
						I-PEX	
						SIZE A3	
						SHEET 3/5	
						REV. 7	

PART NO.	A	QTY. PER EMBOSS REEL (PIECES / REEL)	QTY. PER PACKING CARTON (REELS / CARTON)
20572-001R-08	15	3,000 / REEL	7 REELS / CARTON = 21,000 PIECES



5	PACKING LABEL	-	-
4	REEL	PP	-
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS

ANGLE	±2°	6 OVER 30 MAX.	±0.3		SERIES No. R3	CUSTOMER COPY					
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5								
GENERAL TOLERANCE.				TITLE MHF® 4L PLUG Ni TOP (0.81, 0.64)		SCALE	I-PEX				
DWG.	DATE					-					
CHK.						UNIT					
APP.						mm					
				DWG. No.	20572	SIZE	SHEET	REV.			
						A3	4/5	7			



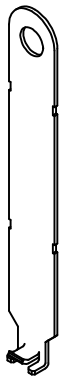
MHF 4 (4L) SMA ADAPTOR
PART NO. 90449-001



MHF 4 (4L) INSPECTION CONNECTOR
PART NO. 90449-003-01



FRONT SIDE



BACK SIDE

MHF 4L PUSHING AND PULLING TOOL
PART NO. 90609-0001

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R3			
GENERAL TOLERANCE.				TITLE MHF® 4L PLUG Ni TOP (0.81, 0.64)		SCALE	I-PEX	
DWG.	DATE					2:1		
CHK.						UNIT		
APP.						mm		
				DWG. No.	20572	SIZE	SHEET	REV.
						A3	5/5	7

1. 适用范围 Scope:

本规格书制定了 50Ω FEP 绝缘低损耗射频电缆 YD081L 系列的结构和电气特性。
This specification covers the construction and the electrical properties of YD081L series of 50Ω FEP Insulation Low Loss Coaxial Cable.

2. 结构/Construction: 单位/Unit:mm

项目/Item		详细资料/Details
导体/Conductor	材料/Material	镀银铜线 /Silver-coated Copper Wire
	构成(根/mm) Composition(No. /mm)	7/0.05
	标称直径/Nom. O. D(mm)	0.15±0.02
绝缘层 /Insulation	材料/Material	聚全氟乙丙烯（自然色） /FEP(Natural)
	标称绝缘厚度/Nom. Thick(mm)	0.13
	标称外径/Nom. O. D(mm)	0.42±0.03
屏蔽层/Shield	材料/Material	铜箔+镀锡铜线 /Copper Mylar Tape+Tinned annealed copper wire
	构成/Composition(mm)	铜箔纵包 /Vertical Wrapping the Copper Mylar Tape
	覆盖率/Coverage (%)	100
	构成/Composition(mm)	8*5/0.05
	覆盖率/Coverage (%)	85±5
	标称外径/Nom. O. D(mm)	0.63±0.05
护套/Jacket	材料/Material	聚全氟乙丙烯(*颜色)/FEP(*color)
	标称护套厚度/Nom. Thick(mm)	0.10
	标称外径/Nom. O. D(mm)	0.83±0.05
	颜色/Color	按与客户确认的颜色/According to corresponding have approved by the suppliers and customers

3. 电气特性(20℃时)/Electrical Properties(at 20℃)

项目/Item	单位/Unit	详细资料/Details
导体电阻/Conductor Resistance	Ω/km	Max. 1580
绝缘电阻/Insulation Resistance	MΩ.km	Min. 200
耐压强度/Dielectric Strength	V(AC)/min	500
静电容/Capacitance	pF/m	98 (1kHz)

特 性 阻 抗 /Characteristic Impedance	Ω	50 ± 3.0	
衰减/Attenuation	dB/m	1GHz	≤ 2.85
		2GHz	≤ 4.15
		3GHz	≤ 5.15
		4GHz	≤ 6.0
		5GHz	≤ 6.85
		6GHz	≤ 7.55
驻波比/Standing wave (0-6GHz)	/	≤ 1.40	

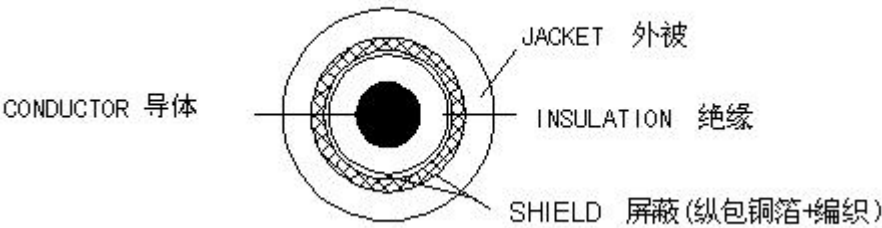
4. 可靠性 Dependability

项目 Item	单位 Unit	标准值 Standard value
最小弯曲半径（一次）Min. bending static	mm	3.2
工作温度范围 Operating temperature	℃	—55 to +200

5. 包装 Packing

标准单位包装长度为 1000 米/盘, 每盘最多允许 5 个接头, 接头最短长度 20 米, 在搬运过程中不能损坏包装.

Standard unit length of finished cable shall be 1000m on reel, frequency of joint max.5/reel, the mini length is 20m. The finished cable shall be packed not be damaged during transportation

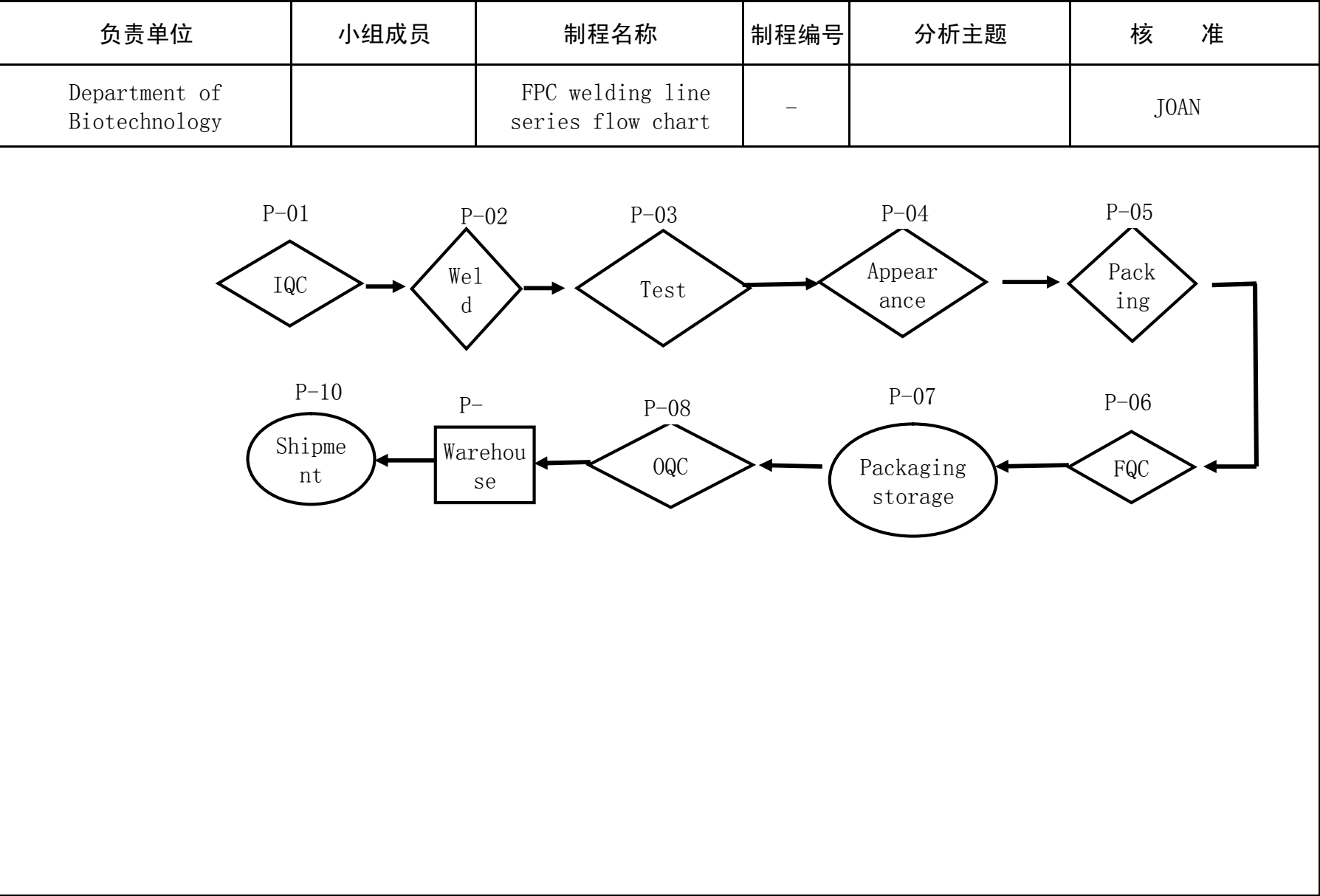


规格书完

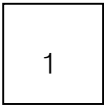
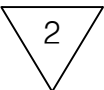
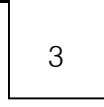
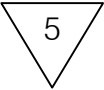
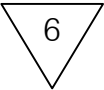
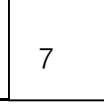
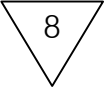
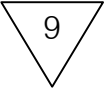
End of specification

Process Flow Chart

Design: Wujie



4M □ C □□ow Chart

Process No	Process Flow (Flow chart)	Process Name	Detail Work	Manage Cycle	4M			
					Man	Machine	Material	Method
1		The raw materials						Storage Control WI□ Material Warehouse operation method H-WI-15-02
2		IQC	incoming check		QC officer	Calipers Quadratic element	Raw material	Refer to the IQC WI□ IQC test method H-WI-10-06
3		Warehousing	IQC test qualified products into the warehouse storage		Operating officer		Raw material	Storage Control WI□ Material Warehouse operation method H-WI-15-02
4		Soldering FPC	Soldering FPC	All Lot	Operating officer	soldering iron	FPC、WIRE	According to SOP
5		VSWR test	VSWR test	All Lot	Operating officer	Network analyzer	Semi-finished	According to SOP
6		Visual inspection	Visual inspection	All Lot	Operating officer		finished	According to SOP
7		packaging	packaging	All Lot	Operating officer		finished	According to SOP
8		FQC	FQC	Electrical 32PCS/LOT Outward AppearanceAll Lot SIZE 5PCS/LOT	QC officer	Calipers Quadratic element	finished	According FQC1 WI H-WI-10-09、As Production Spec
9		OQC	OQC	All Lot	QC officer			VisualShipment NoticeOrder InformationL.P.R.S
10		Shipping	Shipping	All Lot	Operating officer			According Packaging □ Shipment SOP

Reference Guide

■ All the process must be defined on this 4M □ C □□ow chart based on the 4M point of view.

1. Process Number: To be numbered total process from the raw material incoming inspection to production outgoing
2. Process Flow: Define the flow chart shape for each process

3. Process name: Define process name for each process

4. Detail Work: Write down more explanation

5. Man : The worker name of CTQ

Machine : Describe the name of a machine in the field of measurement device.

Material : Raw material which used on manufacturing or inspection.

8. Method : Describe the requirements of the method and write down the specification as quantitative data