

FMG 规格承认书

客户名称 / Customer	INSTA360
客户料号 / Customer P/N.	QT.A001201
供应商 / Supplier	深圳市中天迅通信技术股份有限公司 Shenzhen ZTX Communication Technology Co., Ltd
供方料号 / Supplier P/N.	2.00005654
时间 / Time	23-Nov-22
版本 / Version	A4

供应商会签 Approval			
批准 Approval	品质承认 QA Approval	工程承认 PE Approval	研发承认 RD Approval

客户承认 Customer Approval			
批准 Approval	品质承认 QA Approval	研发承认 RD Approval	采购承认 PUR Approval




注：会签必须手工签字确认；

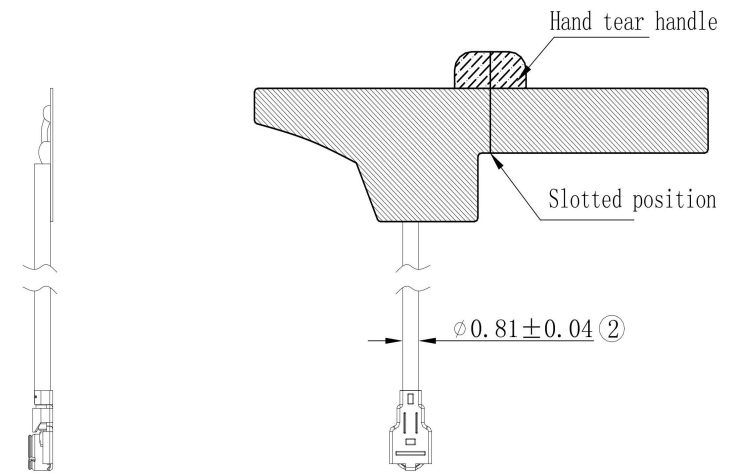
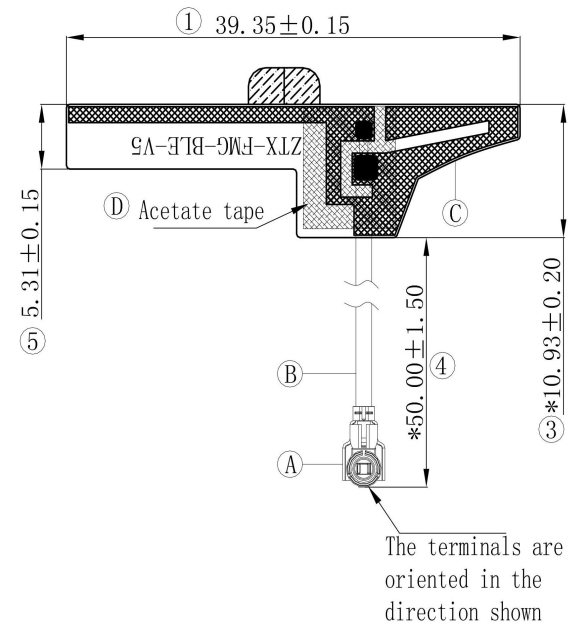


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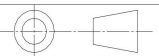
Rev 版本	Description 描述	Designed 制图	Date 日期
A1	Initial Release	ZHENWEI CHEN	2022.10.10

-  Copper Foil
-  OSP Process
-  Shape



Remark:
 1: The dimensions marked in the figure are key control dimensions, and all trial production or mold samples need to be measured.
 The size with "*" is a mandatory item for IQC; The unmarked tolerance is controlled by reference to the tolerance table in the frame;
 2: The finished product can be assembled only after the size, appearance and performance of each component are confirmed to meet the standards;
 3: The product welding should be stable, there can be no false welding, and the solder joint cannot have too high and spikes.
 4: The surface of the product should not have bad problems such as stains, wrinkles, and exposed copper;
 5: The ink surface needs to pass the requirements of the hatch grid test;
 6: Packing method: PE bag shipment; The product needs to be packaged according to the requirements and transported during transportation
 There can be no obvious extrusion deformation and other phenomena.
 7: Without confirmation by ZTX, the material and process requirements cannot be changed at will.
 8: All materials need to meet RoHS2.0+HF requirements;

 **深圳市中天迅通信技术有限公司**
 Shenzhen ZHONGTIANXUN Communication Technology Shares Co.,Ltd

General Tolerance		Date 日期: 2022.10.10	Unit 单位: mm	Rev 版本: A1	Scale 比例:	Project Name 项目名称: TFM (FMG)
Dim	Grade	A	B	Designed 设计: ZHENWEI CHEN	Material 材料:	Product Name 产品名称: Antenna assembly diagram
5-10		±0.05	±0.10	Checked 审核: JIN WEI	Process 工艺:	Material Code 物料编码: 2.00005654
10-20		±0.10	±0.15	Approval 批准: GUOHUA ZOU	Third Angle 第三视角	Drawing Number 图纸编号: ZTX-QR-RD-013
20-40		±0.15	±0.25			
40>		±0.20	±0.40			

Description of the material process of the part:

No	Item	Material Description	Quantity	Remark
Ⓐ	RF Connector	Phosphor bronze / surface gold plating / 4th generation	1PCS	Part No: 2.9.66.0041
Ⓑ	Coaxial line	Silver tin/FEP/black/L=59.5mm	1PCS	Part No: 1.04.80100
Ⓒ	FPC Antenna	Single panel/electrolytic copper/pair and a half/OSP process	1PCS	Black Color
Ⓓ	Acetate tape	Black acetate tape/tape backing	1PCS	

CPK

Customer name :INSTA360 Product Model Number:FMG (TFM) antenna components										Approved by		Checked by:		Name of operator:	
Product type :FPC+ coaxial line Date :2022/10/25										Xiaohua Deng		Ailing Yi		Lihua Li	
spec (NO)	39.35		10.93		50.00								Comments		
	0.15	0.15	0.20	0.20	1.50	1.50									
1	39.41		10.88		50.00										
2	39.39		10.87		50.00										
3	39.40		10.86		51.00										
4	39.38		10.89		50.00										
5	39.42		10.87		50.00										
6	39.37		10.89		51.00										
7	39.41		10.90		50.00										
8	39.39		10.88		50.00										
9	39.40		10.87		50.00										
10	39.38		10.85		50.00										
11	39.36		10.91		50.50										
12	39.41		10.90		50.00										
13	39.39		10.88		50.00										
14	39.36		10.88		50.00										
15	39.41		10.86		50.50										
16	39.44		10.86		50.00										
17	39.43		10.83		50.00										
18	39.38		10.85		50.00										
19	39.42		10.84		50.00										
20	39.36		10.90		50.00										
21	39.37		10.84		50.00										
22	39.38		10.87		50.00										
23	39.39		10.85		50.00										
24	39.36		10.84		50.00										
25	39.38		10.89		50.00										
26	39.37		10.85		51.00										
27	39.41		10.90		50.00										
28	39.42		10.83		50.00										
29	39.36		10.85		50.00										
30	39.43		10.86		50.50										
31	39.40		10.89		50.00										
32	39.37		10.83		50.00										
MAX	39.44		10.91		51.00	0.00	0.00	0.00	0.00						
MIN	39.36		10.83		50	0	0	0	0						
X	39.39		10.87		50.14	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!						
M	39.50		11.13		51.50	0.00	0.00	0.00	0.00						
CP	2.126		2.851		1.577	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!						
SN-1	0.024		0.023		0.317	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!						
K	0.2813		0.3109		0.0938	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!						
CPK/determine	1.528	meet	1.965	Be very content	1.429	meet	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Total judgment	The CPK value is "very satisfied" with the production conditions and can be mass produced.														

1. Batch production can be carried out if the CPK value is "satisfied", but inspection needs to be strengthened. 2. When CPK values are "very satisfied", sampling inspection can be carried out during mass production. 3. If one of the CPK values fails to meet the requirement of "meet", the reasons should be analyzed and improved.

FAI

Customer name	INSTA360	Name of Product	FMG (TFM) antenna components	number	10
Material of product	FPC+ acetate tape + coaxial line + terminal	Color of material	black	date	2022/10/25

Product Type: New Appearance Changed Appearance Mass Production Trial production sample

NO	type	Specifications and Dimensions	Tolerance	Tolerance	Measured size										determine	note
					1	2	3	4	5	6	7	8	9	10		
1	*	39.35	0.15	0.15	39.34	39.34	39.33	39.31	39.34	39.33	39.33	39.33	39.32	39.35	OK	
2	∅	0.81	0.04	0.04	0.81	0.81	0.82	0.82	0.82	0.81	0.81	0.82	0.81	0.82	OK	
3	*	10.93	0.20	0.20	10.91	10.89	10.89	10.90	10.91	10.88	10.90	10.89	10.90	10.91	OK	
4	*	50.00	1.50	1.50	50.02	49.98	49.98	50.08	49.92	49.88	49.97	50.06	50.02	50.04	OK	
5		5.31	0.15	0.15	5.28	5.28	5.3	5.3	5.29	5.28	5.31	5.3	5.28	5.29	OK	
6																
7																
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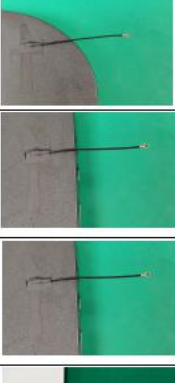

appearance: OK

other:/OK

Total judgment: OK NG
 Approved by: Xiaohua Deng Checked by: Ailing Yi Name of operator: Lihua Li

note:

测试报告(Test Report)

样品名称 (Product name)		ETAntenna assembly		样品型号 (Part Model)		FMG (TFM)		环境温度 (Ambient temperature)		20±5℃		测试日期 (Date of test)		2022/8/23	
样品数量 (Specimens quantity)		12PCS		客户料号 (Customer number)		/		相对湿度 (Relative humidity)		50-60%RH		委托单位 (Client/Dept)		Quality Department	
测试原因 (Test reasons)		<input checked="" type="checkbox"/> 新型号材料验证 <input type="checkbox"/> 新工艺验证 <input type="checkbox"/> ORT测试 <input type="checkbox"/> 过期物料 <input type="checkbox"/> 客户投诉/要求 <input type="checkbox"/> 高不良率 <input type="checkbox"/> 其他: <u>定期可行性分析</u>						测试依据 (Test documentation)		<input type="checkbox"/> Product drawing <input checked="" type="checkbox"/> antenna reliability test reference book <input type="checkbox"/> Customer requirements <input type="checkbox"/> Outgoing Inspection Reference <input type="checkbox"/> Others:					
序号 (NO)	测试项目 (Test project)	样品数 (Samples Qty.)	测试仪器 (Test equipment)	测试条件与要求 (Test condition and note)		测试结果 (Test result)		(Conclude) (Pass/Fail)		样品图片/实测值 Sample picture/measured value					
1	Salt spray test	3	Salt spray testing machine	Conditions: 1. Place the product in the test chamber at 30 ° ±5 ° 2. Adjust the parameters of the test chamber: NaCl (no water): Concentration 5%±1%; pH value: 6.5 ~ 7.2; Laboratory temperature: 32-38℃; Compressed air pressure :1.0±0.01(KG/M2) spray volume :1.0 ~ 2.0ML/80CM2/H. Relative humidity :85%±2%; Test product placement Angle :30 degrees +/-10 degrees 3. The storage time is 48 hours. 4. After cleaning, place in room temperature for 2 hours for observation Requirements: plating (coating) layer without falling off, foaming, corrosion, oxidation and other adverse phenomena; The surface of the product shall not have rust spots and other undesirable phenomena		No coating shedding and oxidation occurred.		Pass							
2	High temperature test	3	High and low temperature alternating humidity and heat test chamber	1. Put the sample into a high temperature environment of 85 °C for 48 hours and take it out 2. Store at room temperature for 2 hours.		After the test, the product has no deformation, no discoloration, no falling off, no wrinkling, no warping, electrical function is intact		Pass							
3	Low temperature test	3	Low temperature refrigerator	1. Put the sample into a low temperature -40 °C environment for 48 hours and take it out 2. Store at room temperature for 2 hours.		After the test, the product has no deformation, no discoloration, no falling off, no wrinkling, no warping, electrical function is intact		Pass							
4	High temperature and high humidity storage test	3	High and low temperature alternating humidity and heat test chamber	1. Sample 3pcs 2. Put the test sample in the test chamber (temperature 70±2℃, humidity 90% ~ 95%RH), and take it out for inspection after 48H.		After the test, the product has no deformation, no discoloration, no falling off, no wrinkling, no warping, electrical function is intact		Pass							

Comments:

Approved by: Xiaohua Deng

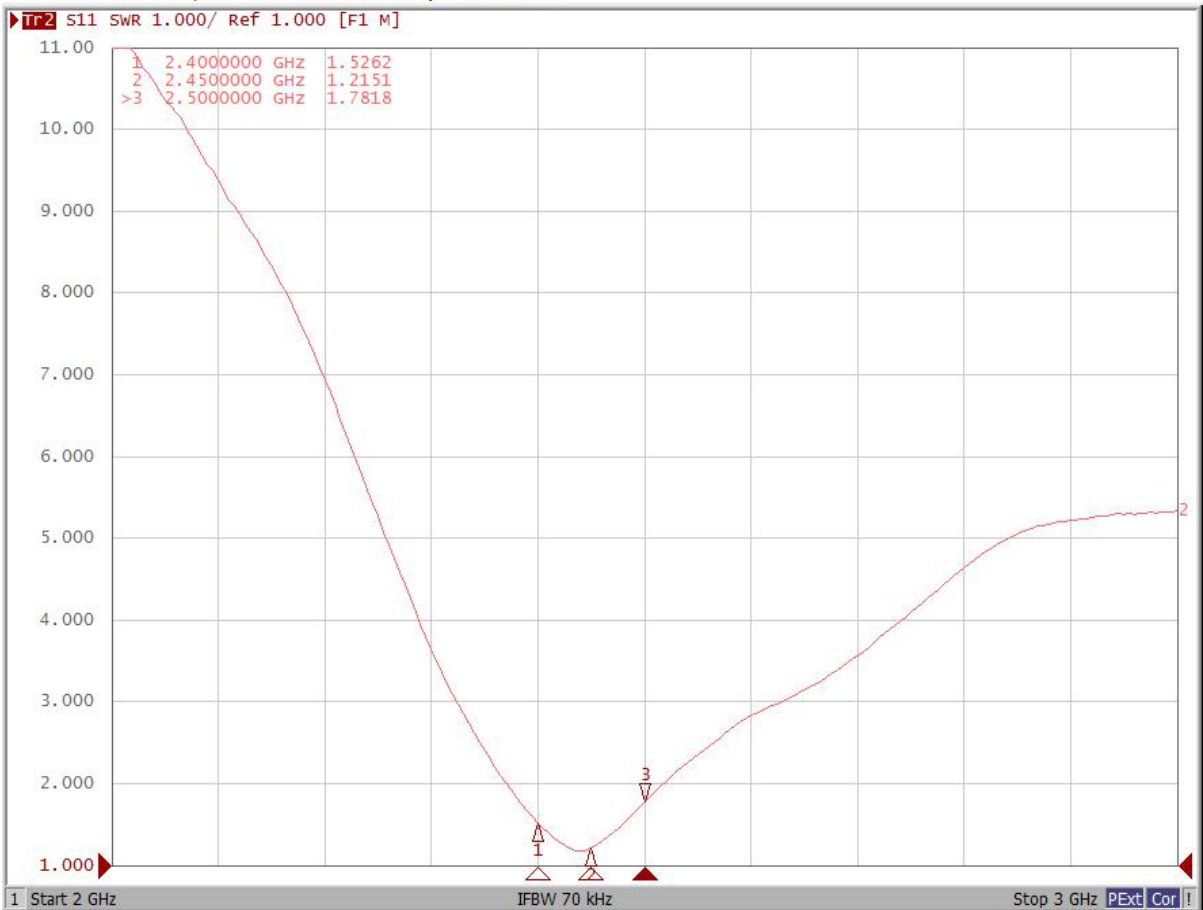
Checked by: Ailing Yi

Name of operator: Lihua Li

VSWR

E5071C Network Analyzer

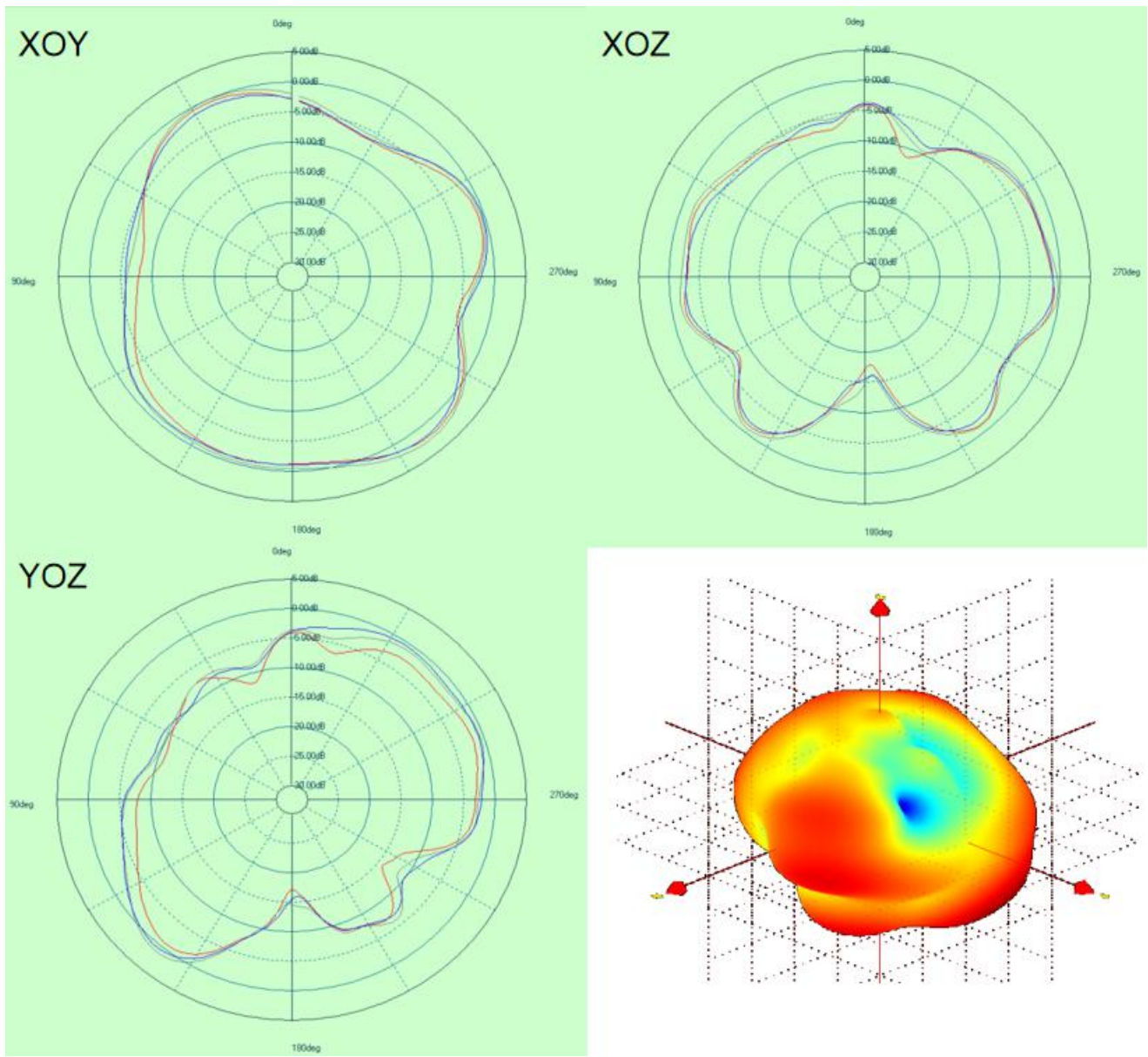
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State



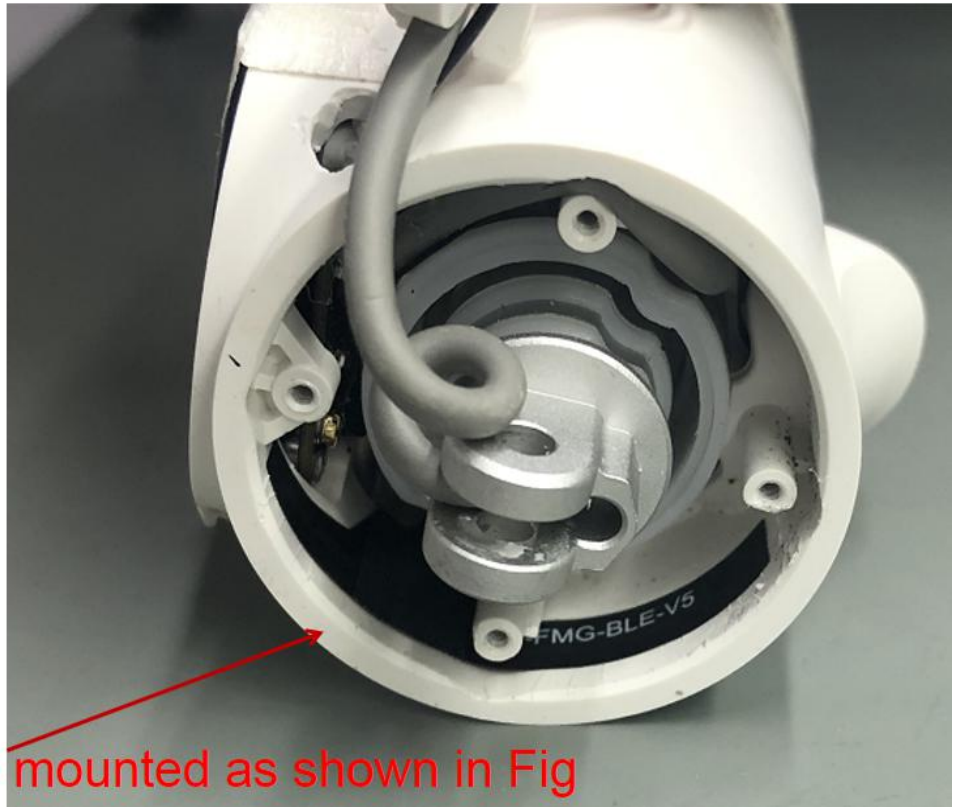
No-

	Frequency (MHz)	2400	2450	2500
ANT	Efficiency (dB)	-2.9	-2.7	-2.8
	Efficiency (%)	51	53	52
	Gain (dBi)	2.3	2.5	2.4

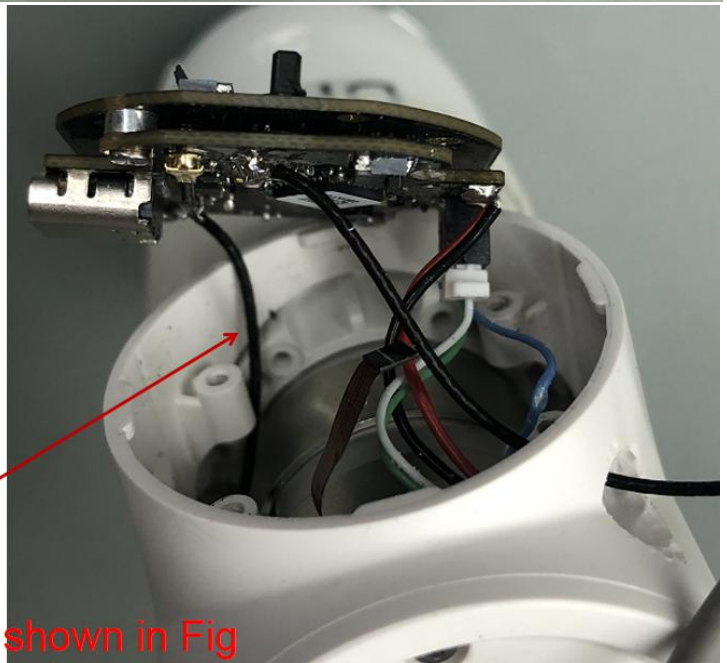
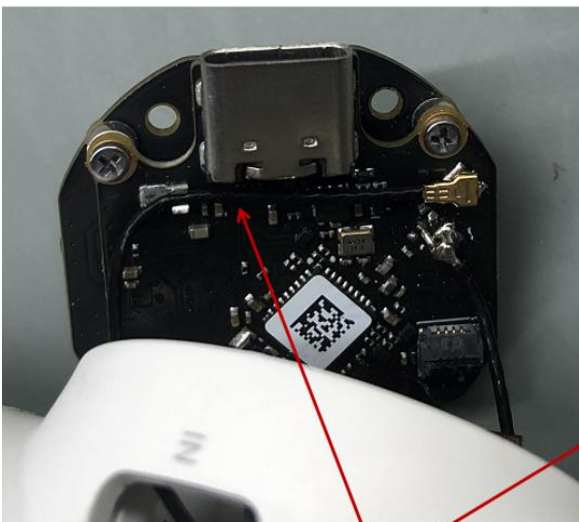
2D/3D Radiation Pattern Results



Environment treatment



The antenna is mounted as shown in Fig



The coaxial fixation mode is as shown in Fig

QC engineering drawing

Product number	general	To formulate department	Quality department	Disposal measures for	ZTX-QD-SP-082	approval	audit	To formulate
The product name	Coaxial line +FPC	Set the date	2022/11/15	Release date	2022/11/15	Xiaohua Deng	ailing yi	dengshan yang

NO.	process	The name of the process	The key working	Control method						Operating standards	Equipment and tooling	Exception handling	Disposal measures for nonconformity	
				Main control item	Description of criteria	Check the method	Measuring tool	The tester	record					Save the
1	Receive the goods	Receive the goods		1. Material label check of delivery note 2. Quantity 3. Check product packaging method	1. The quantity/material number/product name of the PURCHASE order shall be consistent with the delivery note and the physical object 2. The incoming material is not damaged and short 3. Confirm that the packing method of materials meets the requirements	100% inspection	Visual/electronic scale	warehouse keeper	< Incoming acceptance list & GT;	3 year	< Product handling, storage, packaging and delivery control procedures & GT; < Storage work guidelines & GT; , & lt; Supplier packaging requirements specification & GT;	Trolley, turnover box, electronic scale	1. If the quantity/material number/product name of the purchase order is inconsistent with the delivery note and material object, report the abnormality to the purchase and reject the material. 2. Short/damaged incoming materials, keep the site and take photos, report abnormal to purchase	Return of the goods
2	Incoming inspection	Incoming inspection		1. Key dimensions or parameters specified in drawings or inspection instructions 2. Acceptance criteria: Major AQL=0.4, minor AQL= 1.03. Reliability test: high and low temperature/salt spray test / Hundred Bar test	1. Material material/size should be consistent with the drawing 2. Appearance must conform to incoming inspection benchmark 3. Meet the requirements of drawing approval test	1. Appearance AQL= MA:1.0/MI:0.4. Size: 10PCS 3. Reliability: 3PCS	Visual/secondary optical measuring instrument	IQC	< Incoming acceptance list & GT;	3 year	< Incoming material inspection control procedure & GT; , & lt; Nonconformity control procedure & GT; , & lt; Incoming inspection Standard & GT;	secondary optical measuring instrument/Hundred Bar test/salt mist machine/high and low temperature alternating humid heat experimental box, etc	Organize MREB to judge and reject the defective batches that are controversial, have unclear impact or are in urgent need of production. 2. Issue < to the supplier in case of serious shortage in continuous delivery; Supplier corrective and preventive Action Improvement Report & GT;	Quarantine/return/select ion/special selection
3	Put in storage	Put in storage		1. The account corresponds with the real thing 2. The materials meet the 5S standard	1. The warehouse shall check and store the qualified materials inspected by IQC 2. Check unqualified products and put them into the warehouse, and inform the purchaser to arrange return 3. Arrange and place the materials on corresponding shelves or areas, and do a good job. Material transceiver card & GT; Incoming and outgoing account management	100% inspection	Visual/electronic scale	warehouse keeper	< Purchase order & GT; < Returns a single & gt;	3 year	< Product handling, storage, packaging and delivery control procedures & GT; < Warehouse Work Guidelines & GT; < Nonconformity control procedure & GT;	Trolley, turnover box, electronic scale	Find material shortage/damage, keep the site and take photos, report abnormal supervisor and inform IQC/purchase to the site for investigation	Return of the goods
4	Distribution of materials	Distribution of materials		1. Prepare materials 2. Check materials 3. Supporting materials	1. Prepare materials required by work order 2 hours in advance according to production plan; 2. The material object, the material number of the material sheet, the name of the product, the specification, the quantity are consistent/the material is not damaged; 3. After receiving materials, check whether the materials are in uniform	N/A	Visual/electronic scale	warehouse keeper/Monitor of the class	< Shipment schedule & GT; < Material requisition & gt;	3 year	< Production control operation procedure & GT; < Product handling, storage, packaging and delivery control procedures & GT; < Material list & GT;	Trolley, turnover box, electronic scale	1. Work order is short of material, reply < Shipment schedule & GT; 2. Check with the warehouse keeper in time if incorrect or short materials are found when ordering materials. If there is any difference between the two parties, contact the respective supervisor to solve it.	Back to the warehouse
5	Production preparation	Production preparation		1. Data preparation 2. Production tools preparation 3. Spot inspection/calibration of tools and instruments 4. Hanging at SOP station 5. Making the first piece	1. Have standard documents such as SOP prepared before production; 2. Whether the corresponding products are equipped with treatment tools; 3. Equipment maintenance spot inspection 4. Place the material at the station corresponding to SOP before it goes online 5. Meet the requirements of specifications, drawings and SOP	the first piece	Visual/testing tools/network analyzer	Clerk/Monitor of the class/PE/IPQC	< Machine maintenance inspection list & GT; < First Inspection Report & GT;	3 year	< Monitoring and measuring device control procedures & GT; , & lt; Production control operation procedure & GT; , SOP, drawing	secondary optical measuring instrument	1. If the material does not correspond to the material required by the production model, check with the warehouse keeper in time to see if it is consistent with the BOM, and ask engineering personnel for confirmation; 2. Confirm with engineering personnel and correct immediately if the SOP version or	Confirm, change

6	Automatic wire	Strip the cable/hit the terminal/test/dip the tin	<ul style="list-style-type: none"> 1. Material confirmation 2. Strip wire size 3. Notch 4. Performance 5. Tin immersion 6. Terminal appearance/reliability 	<ul style="list-style-type: none"> 1. The material model must be consistent with the BOM and drawings. 2. The stripping size of the wire shall be consistent with the drawing. 3. The skin/insulation layer of the wire shall be completely cut without burr. The cut of the core wire is bent 90 degrees twice without fracture. 4. 300W high voltage on-off test. 5. 2-4 seconds. The insulation layer/core should be full and bright. 6. The scratch of the terminal must not expose the base material or have burrs. The second grip of the terminal should grasp the outer cortex, the tension between the terminal and the wire. 9. 8N, the integrated pulling force of terminal and board end > 5N 	First inspection 3PCS/100% self-inspection, inspection (appearance 20PCS/2H, reliability 1PCS/2H)	visual	Operator/IPQC	< > < > First inspection report < > < > IPQC spot inspection report < >		< > Process inspection control Procedure < > , related model SOP, drawings	Tin stove/wire stripper/terminal machine/tension meter	Stop production and adjust parameters	rework
7	Welding coaxial	welding	<ul style="list-style-type: none"> 1. Solder 2. Appearance 3. Terminal orientation 	<ul style="list-style-type: none"> 1. The welding points should be smooth, and there should be no pointed points, virtual welding, and the height of the solder joint should be consistent with the drawing 2. Do not stain, conductive cloth do not burn/stick tin 	First inspection 3PCS/100% self-inspection, inspection (appearance 20PCS/2H, reliability 1PCS/2H)	Visual/silicone	Operator/IPQC	< > First inspection report < > < > IPQC spot inspection report < >	3 years	< > Process inspection control Procedure < > , related model SOP	Soldering iron	Stop production	rework
8	laminating	Stick on auxiliary material	<ul style="list-style-type: none"> 1. Apply acetic acid cloth 2. Mounting position 2. Maintain pressure 	<ul style="list-style-type: none"> 1. Do not warp or leak the paste. 2. Stick to the positioning line according to the requirements of the drawing 3. Pressure holding time with fingers after fitting :2S 	First inspection 3PCS/100% self-inspection, inspection (appearance 20PCS/2H, reliability 1PCS/2H)	Visual/silicone	Operator/IPQC	< > First inspection report < > < > IPQC spot inspection report < >	3 years	< > Process inspection control Procedure < > , related model SOP	tweezers	Stop production	rework
9	Test	Test	<ul style="list-style-type: none"> 1. Consistency test 	It is consistent with the research and development sample test	100% inspection	Testing and moulding tool	FQC	< > FQC inspection report < >	3 years	SOP and test reference book for each model	Testing and moulding tool	Stop production	rework
10	inspection	inspection	<ul style="list-style-type: none"> 1. Appearance inspection 2. Performance/reliability 	1. Refer to product SOP/inspection reference book	100% inspection	Eye/shake	FQC	< > FQC inspection report < >	3 years	SOP and test reference book for each model	Caliper/straightedge / Testing	Stop production	rework
11	packaging	packaging	<ul style="list-style-type: none"> 1. Quantity checking 2. Packing method 	<ul style="list-style-type: none"> 1. The quantity is consistent with the label 2. Meet SOP requirements 	100% inspection	visual	operator	< > Daily production report < >	3 years	< > Packaging specification < > , related model SOP	Heat sealing machine / Scale of	Stop production	rework
12	Put in storage	Put in storage	<ul style="list-style-type: none"> 1. Quantity 2. Packing 	<ul style="list-style-type: none"> 1. The quantity is consistent with the actual product 2. Packing and warehousing as required 	100% inspection	visual	Store clerk/storerokeeper	< > Warehousing order < >	3 years	< > Product handling, storage, packaging and delivery control procedures < > , < > Process inspection control Procedure < >	Trolley/t turnover box/electronic scale	Stop storage	rework
13	OQC inspection	OQC inspection	<ul style="list-style-type: none"> 1. Appearance 2. Packaging/label 	<ul style="list-style-type: none"> 1. Consistent with the sample 2. Consistent with the drawing requirements 3. Shipment packing method meets customer's requirements 	1. Appearance AQL= MA:1.0/MI:0.4 2. Size: 10PCS	Visual/caliper/quadratic element	QA	< > Shipment report < >	3 years	< > Final inspection control procedure < > , < > Nonconformity control procedures < >	Caliper/straightedge / Testing and moulding	Stop shipping	rework
14	shipment	shipment	<ul style="list-style-type: none"> 1. Quantity 2. Packing 	<ul style="list-style-type: none"> 1. The quantity is consistent with the actual product 2. Packing and warehousing as required 	100% inspection	visual	Store clerk/storerokeeper	< > Order of Shipment < >	3 years	< > Product handling, storage, packaging and delivery control procedures < > , < > Process inspection control Procedure < >	Trolley/t turnover box/electronic scale	Stop shipping	rework





The title	FPC+ copper axis SIP	Document number	ZTX-QD-SP-025				
Department of Formulation	Quality Department	Date of establishment	2021/11/15	version	A3		
I. Inspection basis: 1. Specifications and limit samples recognized by the customer 2. Engineering drawing file/acknowledgement letter/sample 3. Appearance inspection standard of parts		ii. Sampling level: According to the need, the sampling number can be divided into special sampling and GB/T2828.1-2012 sampling level. a. According to the normal inspection, the appearance sampling shall adopt the single scheme of GB/T2828.1-2012 sampling level (II level). b. N=10 and C=0 shall be used for size sampling according to normal inspection					
iii. Inspection Conditions: 1. Lighting & vision: lighting degree ≥ 800 Lux corrected visual acuity above 1.0 2. Visual time: Confirm defects within 10 seconds 3. Visual distance: the distance between the naked eye and the measured object is 30cm to 45cm 4. Visual Angle: within 30 to 45 degrees of the measured object							
Iv. Comparison table of defect codes							
Name (unit)	diameter (mm)	length (mm)	area (mm ²)	number (pcs)	width (mm)	distance (mm)	Height and depth (mm)
code	D	L	S	N	W	DS	H
Five, homework content:							
project	Scope of inspection		level	Criterion of judgment		Tool of inspection	Grade of defect
appearance	all	The color difference	△	Not allowed/according to color limit sample		visual	MI
		The dirt	△	L \leq 3mm or W \leq 2mm and not visible to the naked eye at 30cm.		visual	MI
material		The material is inconsistent with the sample and drawing	▲	Not allowed		Visual/material report inspection	MA
appearance	FPC	The FPC surface is exposed to copper	▲	Not allowed		visual	MA
		Coating oxidation/corrosion	△	Not allowed		Visual/Filinka	MI
		Uneven cutting edge (extra material, missing material)	△	L \leq 0.2mm, W \leq 0.1mm			MI
		A cut on Goldfinger	△	Not allowed		visual	MI
		Granular, spotty defects	△	S \leq 0.1mm; allow; S \leq 0.3mm; N \leq 2; DS \geq 30mm;		Visual/Filinka	MI
		The scratch	△	Scratch: W \leq 0.15mm, L \leq 3mm, N \leq 2 No bottom, does not affect the performance			MI
		Poor screen printing	△	Screen printing content is consistent, clear does not affect the identification		visual	MI
		The back adhesive	▲	The back adhesive meets the requirements. The detached paper can not fall off naturally or adhere to each other			MI
	terminal	Defect, coating off	▲	Not allowed		visual	MA
		Cup mouth deformation	▲	Not allowed			MA
		Width of opening	△	It is not allowed to exceed the cup diameter of the drawing		caliper	MI
		Indentation/scratch	△	No underwood is allowed		visual	MI
		Batch of front	△	Do not affect the assembly, do not scratch hands, do not hurt hands (height \leq 0.05mm)		Visual/Filinka	MI
		Direction of terminal	△	Consistent with the drawing requirements, internal control of deviation ($\leq 100MM \pm 30^{\circ}C$, $\leq 350MM \pm 45^{\circ}C$, >350MM Out of control)		visual	MI
wire	The terminal falls off after riveting	▲	Not allowed, the third gripper height (see the antenna terminal rivet height reference table), each batch of pull value qualified		CCD/ tension meter	MA	
	Outer skin damage	△	Do not break the skin and expose the base material		visual	MI	
	Hard line	△	L \leq 8mm		Visual/ruler	MI	
	Middle stripping confirmation	▲	Bend 90 degrees and pull the wire from one end to the other to check whether there is a middle strip		visual	MA	
welding	Virtual welding/fake welding	▲			visual	MA	
	Tin residue/rosin	△	Not allowed			MI	
	Tip of solder joint	△				MI	
	Height of solder joint	▲	Solder joint height \leq 1.7mm		Visual/caliper	MA	
	Cut wire core confirmation	▲	After welding, bend at 60 degrees between the two solder joints, the wire core can not be broken, and the pad can not fall off		visual	MA	

size	measurement	Length, width and thickness (dimensions not included in specifications)	▲	It's not allowed. For the specific size, refer to the corresponding material number drawing, and measure the size according to the requirements	Quadratic element/micrometer/caliper, etc	MA
performance	performance	Performance test	▲	Test product VSWR according to frequency range specified by SOP	RF radio frequency tester	CR
包装 Packaging	Package information compliance	1. Confirm whether the ticket label and two-dimensional code of the product in the outer box are consistent with the material number of the delivery bill 2. Check whether the barcode on the label is blurred, damaged, or dirty 3. The outer box is damaged and deformed	△	1. Information such as material number/quantity must be consistent 2. The bar code is not allowed to have blurred print, damage, dirty, can not affect the scanning identification. 3. No puncture is allowed for damage, and the deformation degree is less than 3cm	Visual/scan gun	MI
	数量 The number	1. Check whether the quantity of unpacked materials is consistent with that on the label 2. Each box misses weighing or misses pasting weighing barcode 3. The mantissa label is omitted	▲	1. The actual quantity must be consistent with the label 2. Weigh according to SOP requirements, and attach the weighing bar code 3. Mantissa packaging and outer boxes should be labeled with mantissa	Visual/scan gun	MA
	Environmental protection Label	External box leakage paste corresponding ROHS label	△	Not allowed	visual	MI
可靠性 Reliability	Terminal tension	1, the terminal grip riveting height 2. Terminal tension		1, (see antenna terminal riveting height reference table) 2, customer requirements, no requirements according to our standards (such as 1.13: tension :> 9.8 N)	Tensile force meter	MA
	Terminal pulling force	Terminal comprehensive pull out force		≥5N at the first time, ≥3N after 30 times	Tensile force meter	MA
	Conventional reliability	Salt spray test/hot and cold shock test/high temperature test/low temperature test, etc		According to customer requirements, if the customer does not require, according to our antenna reliability test base book, file number: ZTX-QD-SP-018 send test	Salt spray testing machine/hot and cold impact test chamber/constant temperature and humidity test chamber	MA
Environmental protection	HSF	HSF compliance	▲	1. The environmental report shall meet the requirements of RoHS2.0 within the validity period or the material content 2, all packaging RoHS label is not clear or not allowed	spectrograph	CR

Note: "▲" is the key feature; △ is an important feature

1. Three minor defects accumulate to be a minor defect, and three minor defects accumulate to be a major defect.
- 2, according to the customer's requirements on the appearance, can be appropriate to adjust the inspection standards to meet customer requirements.
3. Key inspection items: bracket buckle, screw hole, motor assembly, horn assembly, camera assembly and other assembly positions.



General settlement of trial production report

Name of Product		TFM	Class don't	FPC+Axis of symmetry	Name of Customer	/	Product Number	/									
Trial production quantity		1000	Number of trial production	1	Ring is protected	/	Date of completion of trial production	2022/9/24									
DVT01	process	Number of inputs	Number of good quality	yield	Analysis of defects	/	/	/									
	The incoming	1030	1030	100.00%													
	welding	1030	1029	99.90%	The FPC is scratched												
	Apply acetic	1029	1029	100.00%													
	Points plate	1029	1029	100.00%													
	Test	1029	1029	100.00%													
	appearance	1029	1026	99.71%	The acetic acid tape is not properly attached												
	packaging	1026	1026	100.00%													
	Rate of direct passage			99.61%													
Top Five Bad	Bad name	Number of defects	Rate of defect		<table border="1" style="display: none;"> <caption>Top Five Bad Data</caption> <thead> <tr> <th>Bad Name</th> <th>Number of Defects</th> <th>Rate of Defect</th> </tr> </thead> <tbody> <tr> <td>Stick a partial</td> <td>3</td> <td>0.29%</td> </tr> <tr> <td>scratch</td> <td>1</td> <td>0.10%</td> </tr> </tbody> </table>				Bad Name	Number of Defects	Rate of Defect	Stick a partial	3	0.29%	scratch	1	0.10%
	Bad Name	Number of Defects	Rate of Defect														
	Stick a partial	3	0.29%														
	scratch	1	0.10%														
	Stick a partial	3	0.29%														
scratch	1	0.10%															
Top 5 Bad solutions	category	Bad name	Bad description	Root cause	Improvement Measures	Time of completion	Person in charge										
	TOP 1	Stick a partial	The acetic acid tape is not properly attached	Do not pay attention to the position of the line	1. Pay more attention to the manufacturing process. 2. Project SOP to advertise the fitting position	2022/9/24	liang ren gan										
	TOP 2	scratch	FPC surface scratch	FPC incoming material scratch	Supplier incoming materials improved	Before the next trial production	liu sun qiao										
	TOP 3																
	TOP 4																
	TOP 5																
	TOP 6																
note																	

Trial production results

Qualified in trial production **The trial production is not qualified**

Creation/time: Arvin

Audit/Time: yang deng shan

Approval/Time: XIAOHUA DENG

Product Model Number FMG (TFM)	Name of Product FPC+Axis of symmetry	version A1	Process number/name packaging	Working time (S) /	Document number ZTX-QD-WI-ASSY-332	Instrument calibration and requirements: 1. Test equipment must be grounded. 2. After reconnecting the interface or when the connection test is unstable, the instrument needs to be corrected. 3. When testing products, ensure that the antenna is set
Operation method & operation parameters (After self-check the operation of this process is qualified, it can be transferred to the next process)						
Sample the beginning		1. Each 50pcs of products shall be neatly wrapped with foam and rubber bands; each 50pcs of products shall be packed with a stapler with a PE pocket, affixed with a small label, and filled with product name, material number, quantity, cycle and other information.				
Begin the labeling		2. Independently packaged products. Put 20 bags into (330*4230mm) PE plastic bags and pack (500PCS) PE bags. Attach small labels and fill in product name, material number, quantity, cycle and other information.				
packing		3. Packing, carton size (45*32.5*21cm), cardboard spacing, put 20 bags per box, excluding the last number of each box (10000pcs), and attached a handwritten inspection report;				
Attach the outer box		4. The label shall be affixed to the upper right corner of the outer box. The content of the label shall be subject to customer's requirements.				
sealing		5. The labeled boxes are sealed with adhesive paper in the shape of "work";				
Figure 1: Product image		6S Requirements:				
Figure 2: Sealed PE bag packing/labeling		1. Keep the surface clean and clean, free of dust, water				
Figure 3: Packing (picture is for reference only)		2. Materials are neatly placed and clearly marked:				
Figure 4: Attached outer box label/Attached shipment		Note: 1. Customer material code and quantity are correct, label must be printed by machine 2. The contents of inner label, outer label, shipping report and delivery note should be consistent.				
Figure 5: Box sealing		3. In case of trial production materials or changes, corresponding labels shall be affixed. The final number of boxes shall be affixed with the final number of labels, and the inspection report shall be attached				
Material Name	Material code	The dosage	note			
PE pocket opening	1. 12. 000030	240*160*0.05mm	50/bag			
PE seal pocket	1. 12. 000029	330*230*mm	10/bag			
The cardboard	1. 13. 000003	42*30cm	2sheets/case			
The cartons	1. 12. 000086	45*32.5*21cm	1/box	10000pcs/Box		
version	A1	Content of Revision	Date of Amendment	Person of revision		
To formulate	HENGFENG XIANG	audit	approval	2022/10/10	HENGFENG XIANG	dang fei fei

Raw Material Detection List
原材料检测清单

序号	组成部件或零件Parts or Components	材料名称或型号Style/Item NO.	Pb 铅	Cd 镉	Hg 汞	Cr6+ 六价铬	PBBs 多溴联苯	PBDEs 多溴联苯醚	邻苯二甲酸二(2-乙基己)酯 DEHP	邻苯二甲酸二丁酯 DBP	邻苯二甲酸丁苄酯 BBP	邻苯二甲酸二异丁酯DIBP	Br	Cl	测试报告编号 Test Report NO.	Test Lab 测试机构名称	测试报告日期	测试报告有效期限	RoHS Report RoHS报告
1	FPC	base material	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC2202460504	SGS	2022/2/21	2023/2/20	
		printing ink	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	253	ETR22705905	SGS	2022/8/5	2023/8/4	
		Silk print (ink white)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	591	ETR22A01347M01	SGS	2022/10/17	2023/10/16	
		Ni	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2210529607101003E	CTI	2021/12/15	2022/12/14	
		OSP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SZXEC2200260402 SZXEC2200316202	SGS	2022/2/16	2023/2/15	
		3MLSE 467	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CANEC2205384301	SGS	2022/4/8	2023/4/7	
2	Cable	Cable— Silver-plated copper wire	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC2127051115	SGS	2021/12/16	2022/12/15	
		coaxial cable—FEP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NGBML2200124301	SGS	2022/1/27	2023/1/26	
		Coaxis—copper foil	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2220077550101005E	CTI	2022/3/8	2023/3/7	
		Coaxial line FEP—BLACK	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A222019568310103C	CTI	2022/5/29	2023/5/28	
3	RF terminal passage 4	C5210	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	CANEC2201952008	SGS	2022/2/11	2023/2/10	
		(Ni)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2220404860101002	CTI	2022/9/9	2023/9/8	
		(Au)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	A2220404860101001	CTI	2022/9/9	2023/9/8	
		PBT black	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	EKR22401642	SGS	2022/4/29	2023/4/28	
4	Acetic acid tape	Fiber cloth	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC22002372907	SGS	2022/10/20	2023/10/19	
		Acrylic glue	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	SHAEC22002372927	SGS	2022/10/20	2023/10/19	