

ANTENNA SPECIFICATION

Customer Name: Shenzhen Valley Ventures Ltd
 Project Name: Seccua-MH Water Filtering Control Device
 Antenna Name: Seccua Antenna
 Antenna Model: Seccua Antenna-1
 Customer P/N: 1200-000226-00
 Antenna Type: FPC Antenna

RoHS **No-RoHS**

Department	ME <input type="checkbox"/>	RF <input type="checkbox"/>	QC <input type="checkbox"/>
Signed By	Hao Chen	Jack Guan	Luna
Date	2023.04.03	2023.04.03	2023.04.03

Supplier Information

Manufacturer: Shenzhen Runicc Wireless Technology Co., LTD	Contact: Steven
Address: Second Floor of Quanhan Creative Park, 1anel, XiaWeiYuan New village, Gushu, Xixiang Street, Bao'an District, Shenzhen	
TEL: 15999527926	FAX: 0755-27218716
EMAIL: Steven@runicc.com	
1. Either RoHS or No RoHS is required; 2. ME and RF engineers involved must also sign	

Shenzhen Valley Ventures

Status	<input type="checkbox"/> Recognition	Make sure the sample size is the same as the 3D size
	■ Tolerances not specified are as follows: $\geq 50.0-149.99 \pm 0.2$; $\geq 150 \pm 0.50$;	
	<input type="checkbox"/> Condition acknowledgement_____	
	<input type="checkbox"/> Temporary limit recognition Limited purchase _____PCS	

Department	ID	Project Manager	<input type="checkbox"/> ME	<input type="checkbox"/> Hardware	<input type="checkbox"/> Software	<input type="checkbox"/> Quality
			ME	RF	Software	DQE
Signed By						
Date						
Inspection items	Apperarance	Dimension	Funtion Test	Relibility Test		

Notes:

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1、 Product specifications and assembly picture

1.1 The specifications of the Seccua antenna -1 :

Technical Features	BT/WIFI		
Frequency Range	2400MHz~2485MHz		
Average Efficiency	> 60%		
Peak Gain	4.83 dBi		
VSWR	< 2:1		
Radiation Pattern	Omnidirectional		
Polarization	Linear		
Weight (approx.)	0.11 g.		
Temperature	-25 to +70 °C		
Impedance	50 Ω		
Dimensions (L x W x H)	25mm x 19.4 mm x 0.2 mm/RF1.13 Black L110mm IPEX I		

1.2 Seccua antenna -1 Assembly illustration:

The Seccua antenna -1 is assembly by soldering cable to FPC, and the cable should be fixed by Acetate Tape.

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2、 Antenna Test Equipment

Agilent E5071C(Fig 2-1) vector network analyzer is used for antenna input characteristic test; Satimo starlab 3D near-field microwave darkroom is used for antenna radiation characteristic test. And RS CMW500(Fig 2-2) comprehensive tester is used. The OTA (Fig 2-3)coordinates are as follows:

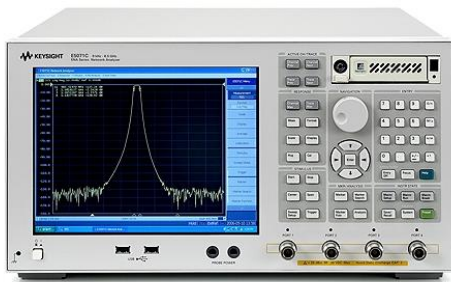


Fig 2-1:E5071C



Fig2-2: RS CMW500

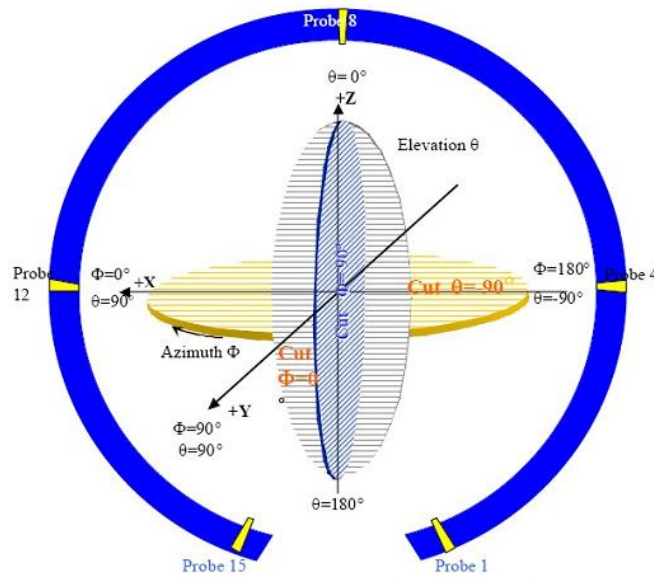


Fig 2-3: 3D OTA

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3、Electrical performance

3.1 Seccua antenna-1 S11 parameters

Seccua -1 S11 passive S11 parameters as fig3-1:

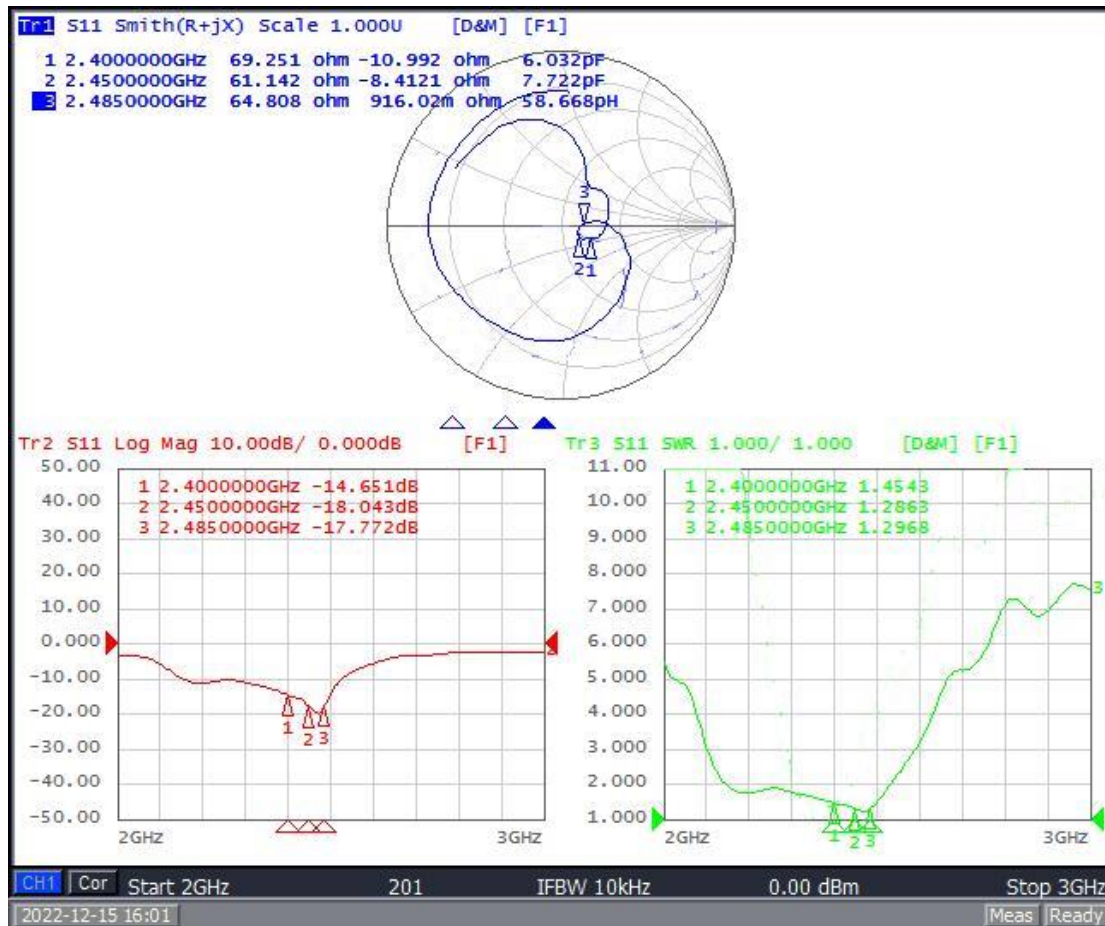


Fig 3-1: Seccua antenna-1 S11 parameters

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3.2 Seccua antenna-1 passive Gain & Efficiency

chNo	Freq	TRP	PeakEIRP	Directivity	Gain	Efficiency_dB	Efficiency_Pcent
1	2400	-2.16	4.21	6.37	4.21	-2.16	60.82
2	2410	-2.08	4.3	6.38	4.3	-2.08	61.94
3	2420	-2.21	4.24	6.45	4.24	-2.21	60.11
4	2430	-2.11	4.67	6.78	4.67	-2.11	61.45
5	2440	-2.1	4.83	6.93	4.83	-2.1	61.69
6	2450	-2.21	4.74	6.95	4.74	-2.21	60.12
7	2460	-2.22	4.7	6.92	4.7	-2.22	59.94
8	2470	-2.28	4.41	6.7	4.41	-2.28	59.12
9	2480	-2.18	4.39	6.57	4.39	-2.18	60.57
10	2490	-2.37	3.82	6.19	3.82	-2.37	57.94
11	2500	-2.49	3.48	5.97	3.48	-2.49	56.34

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3.3 Seccua antenna-1 3D pattern

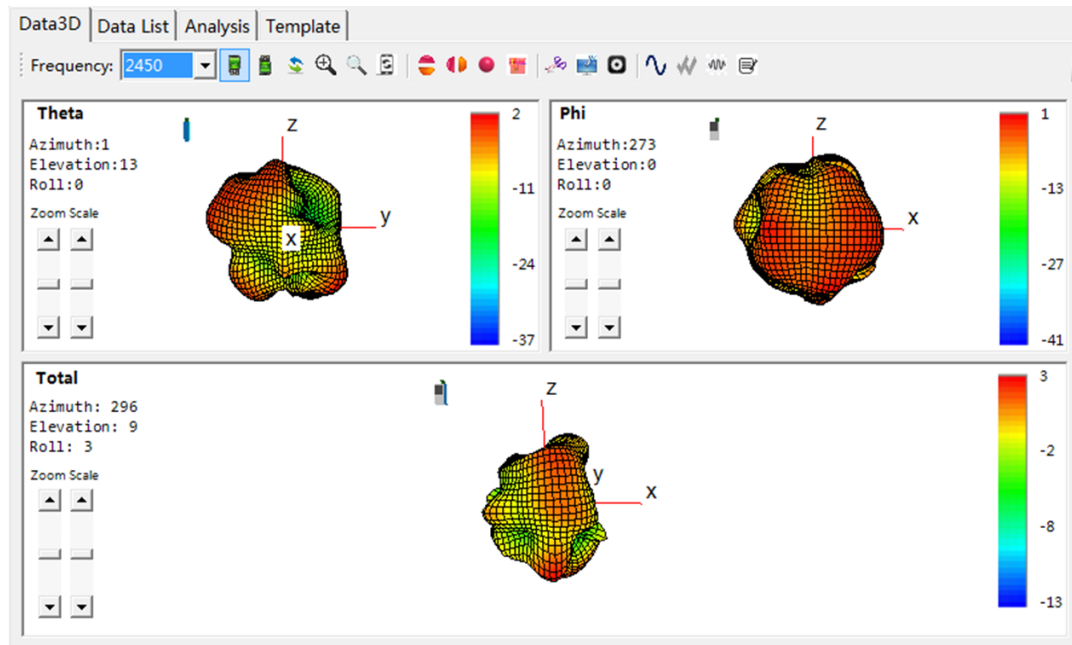


Fig 3-2: Seccua antenna-1 3D pattern

3.4 Seccua antenna-1 2D pattern

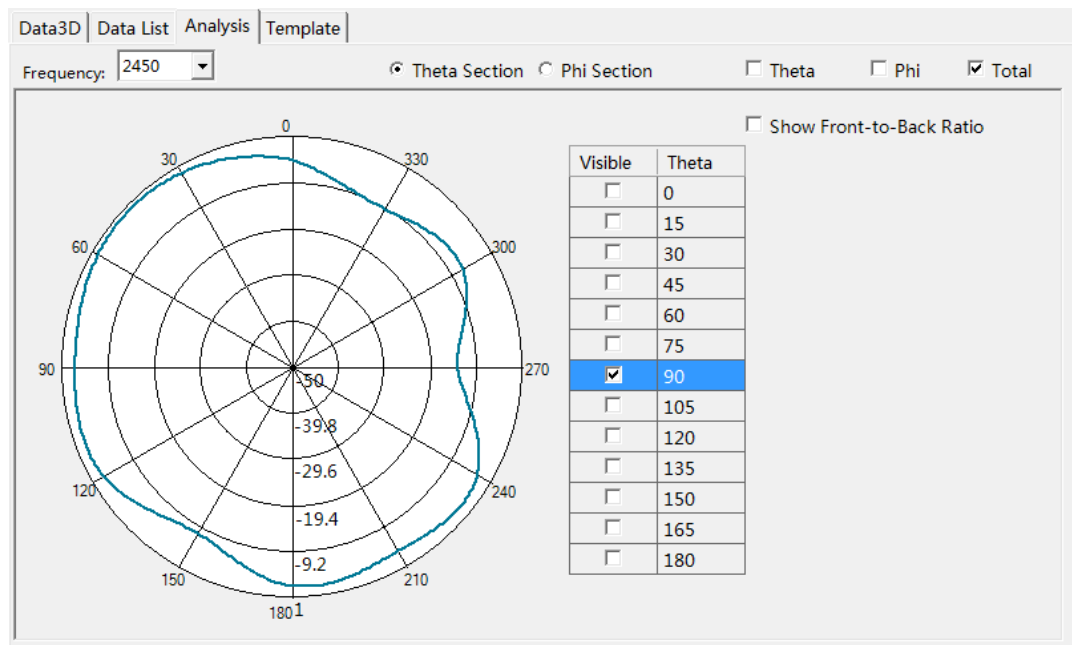


Fig 3-3: Seccua antenna-1 2D pattern

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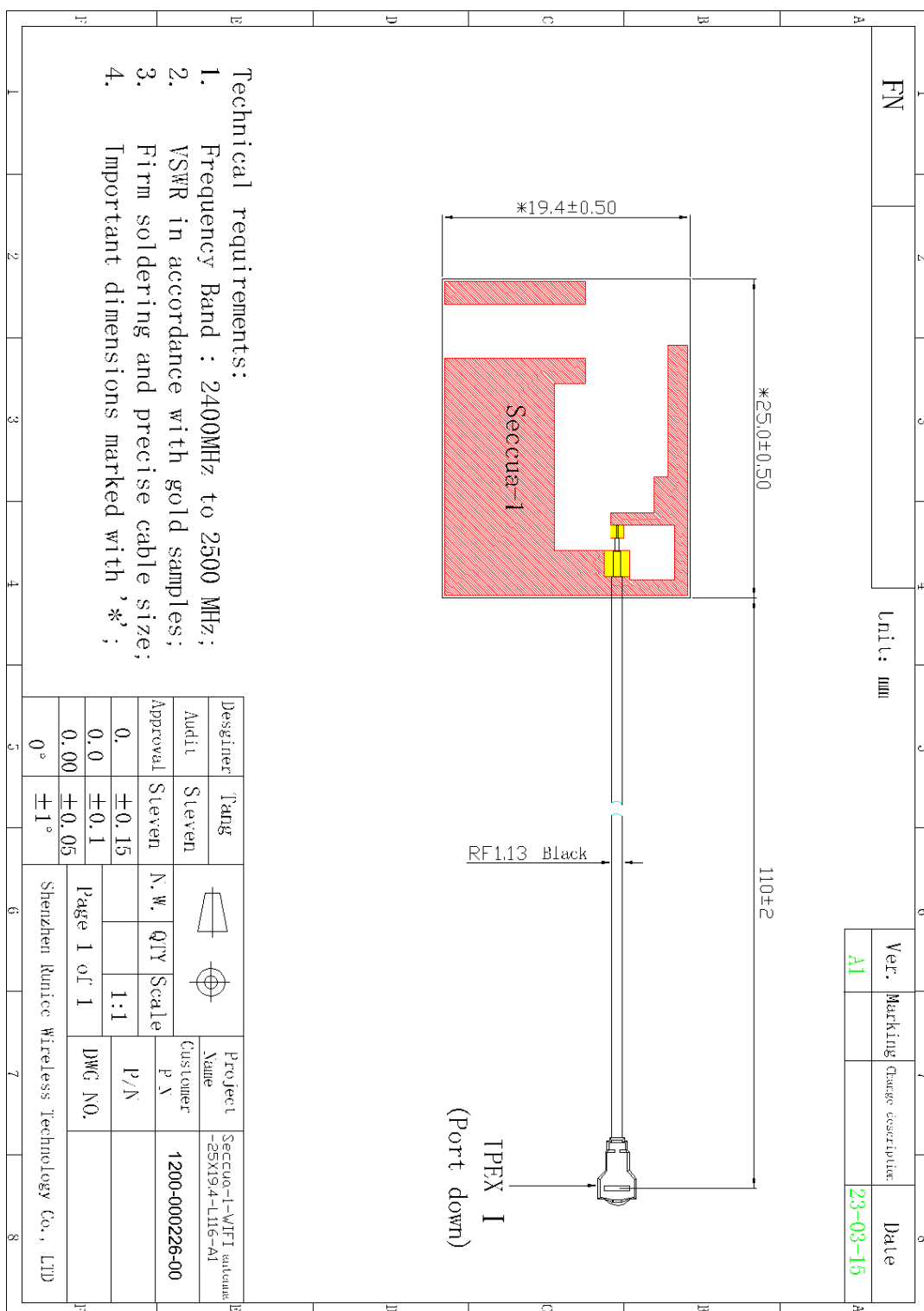
3.5 Seccua antenna-1 active parameters:

Test Equipment					
Equipment	CMW 500				
Band	Wireless Peotocol		Channel	Data	
				TRP(dBm)	TIS(dBm)
WIFI	802.11.b	11M	1	15.86	-84.35
			6	15.98	-81.72
			11	15.85	-84.48

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4、QC engineering drawings



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5、Antenna Samples Test Report

FORM NO. : RN-OGI-010

L/T	LOT	20230316001		Project		Seccua antenna-1				
LOT QTY		50PCS		Samples QTY		30PCS				
Sampling Stander: as GB/T2828, Level II, Sampling Plan: MIL-STD-1=5E II										
AQL:MAJ0.25 MIN=0.65										
Inspection as : QC Antenna Drawing、Gold Master、SPEC. And other requirement.										
1.1 Appearance Check									Judgment	
1	No traces of oxidation, rust, corrosion, or oil stains									OK
2	No solder leaks, tears, and foreign-material									OK
3	The packaging meets the SOP requirements, and the label P/N is correct									OK
4	No mixing									OK
1.2 Dimension、Electrical Spec.					Length Unit: mm					
Seccua-1 WIFI										
	Item	1	2	3	4	5	6	7	8	Judgment
序 号	Content	L	W	SWR	Cable Length	/	/	/	/	/
	Dimension	25.00	19.40	<2.0	110	/	/	/	/	/
	Tolerance	±0.5	±0.5	/	±2	/	/	/	/	/
	Tools	calliper	calliper	Net works	calliper	/	/	/	/	/
1		25.03	19.03	1.28	109.98	/	/	/	/	OK
2		24.98	19.01	1.45	109.85	/	/	/	/	OK
3		24.96	18.94	1.29	110.06	/	/	/	/	OK
4		25.05	19.10	1.27	110.15	/	/	/	/	OK
5		24.97	19.02	1.28	109.91	/	/	/	/	OK
6		/	/	/	/	/	/	/	/	/
7		/	/	/	/	/	/	/	/	/
8		/	/	/	/	/	/	/	/	/
9		/	/	/	/	/	/	/	/	/
10		/	/	/	/	/	/	/	/	/
1.3 Result										
Description:					Result			Approve		
Appearance: if OK or NG <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG					This product meets the design requirements			Tester: Hao Chen		
Dimension and Funcion: if OK or NG <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG								Approve: N Jiang		

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6、 Reliability Test Report

6.1. Constant temperature and humidity test

Test item	Constant temperature and		Test NO.: 2023031301	
Project:	Seccua -1		QTY:	5PCS
Test Date: 2023-03-13			Done Date: 2023-03-16	
Test Equipment: 1.Constant temperature and humidity test BOX 2.8753ES net-work test				
Test condition: 1.Temperature: 25°C ,Humidity:65% 2.+80°85~90%RH 2hours per cycle , TTL 24 Hours;				
Test Result				
SPEC. : 1、 The metal surface coating should be no peeling, cracking, wrinkling, separation, etc; Non metallic parts should not experience discoloration, cracking, deformation, lamination , or other defects; 2、 Electrical Spec: SWR is meet SPEC.				
Item	Before Test	After Test	Deffect	OK/NG
Appearance	No discolour no crack, no deformation, no lamination	No discolour no crack, no deformation, no lamination	No	OK
Electrical	SWR is meet SPEC.	SWR is meet SPEC.	NO	OK
Test Judgment: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG <input type="checkbox"/> Non-Judgment				
Tester : Guo Dong Li Approval: Luna				

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6.2. High and low temperature cold and hot shock Test

Test Item	High and low temperature cold and hot shock Test		Test No.: 2023031301	
Project	Seccua Antenna-1		QTY: 5PCS	
Test Date: 2023-03-13			Done Date: 2023-03-13	
Test Equipment: 1.High and low temperature cold and hot shock Test Box 2.8753ES Net Work				
Test Condition: -40°C (2H) --- 80°C (2H) , 6 cycle, TTL 24 Hours				
Test Result				
SPEC.: 1、 The metal surface coating should be no peeling, cracking, wrinkling, separation, etc; Non metallic parts should not experience discoloration, cracking, deformation,lamination , or other defects; 2、 Electrical Spec: SWR is meet SPEC.				
Item	Before Test	After Test	Deffect	OK/NG
Appearance	No discolour no crack, no deformation, no lamination	No discolour no crack, no deformation, no lamination	No	OK
Electrical	SWR is meet SPEC.	SWR is meet SPEC.	NO	OK
Judgment: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG <input type="checkbox"/> NON-Judgment				
Tester: Pan Zou			Approval: Luna	

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6.3. Salt Spray Test

Test Item	Salt Spray Test		Test NO. : 2023031301
Project	Seccua Antenna-1		QTY: 5PCS
Test Date: 2023-03-13		Done Date: 2023-03-13	
Test Equipment: 1. HL-60-SS Salt Spray Tester			
Test condition: 1. Temp in Salt Spray box: $35 \pm 2^{\circ}\text{C}$; Room Temp: $22 \sim 30^{\circ}\text{C}$ 2. The settling speed of salt spray is 1-2ML/h per 80cm area after 24h spray, the concentration of sodium chloride is $50 \pm 10\text{g/L}$, and the PH value is 6.5/7.2			
Result: PASS			
Sample No.	Result	Defect	
1	PASS	-	
2	PASS	-	
3	PASS	-	
4	PASS	-	
5	PASS	-	
Test Result: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG <input type="checkbox"/> NON-Judgment			
Tester : Pan zou		Approval: Luna	

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7、Material Composition and Hazardous Substances Tabl

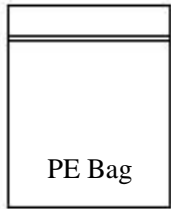


No	Substance Category	Substance	RoHSResult (PPM)						ICP NO.	Test Date
			Cd	Pb	Hg	Cr+6	PBB	PBDE		
1	Coaxial	FEP	ND	ND	ND	ND	ND	ND	SZXEC2202766603	22. 08. 18
		Tin-copper wire	ND	ND	ND	ND	ND	ND	SZXEC22002766603	22. 08. 18
2	CCL	Copper	ND	ND	ND	ND	ND	ND	A2220205292201001E	22. 04. 14
3	Cover PI	PI	ND	ND	ND	ND	ND	ND	SHAEC2202504302	22. 05. 21
4	Ink	Epoxy acrylic resin	ND	ND	ND	ND	ND	ND	SZXEC2202766604	22. 08. 18

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8.Package Spec

PACKING CRITERION

Customer P/N: 1200-000226-00			
Project : Seccua antenna-1			
一、 Label SPEC.			
Inner Box label 50 X50mm		Out BOX label 90X60mm	
customer	*****		
Supplier			
Material NO.	*****		
Lot NO.	*****		
Material Name	****	QC	**
QTY	****	Date	****.***
Code	****	Remark	**
customer	*****		
Supplier			
Material NO.	*****		
Lot NO.	*****		
Material Name	*****	QC	**
QTY	*****	Date	****.***
Code	*****	Remark	**
二、 Package detail:			
SOP:			
1. Inner box:			
Seccua antenna-1 FPC 天 <u>100</u> PCS/ package,			
			 <p>PE Bag</p>
2. Carton BOX:			
<u>quantity/box based on actual packaging</u>			
		<p>Carton BOX</p> 	

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