

Zhejiang wenzhou haitong
communication electronics

Specification

(FPC+CABLE)

Customer name: Jin Liuming

Project name: 35W-AL

Material No: 1.05.10.0006

Material name: MAIN-ASM

Sample material: FPC+CABLE

Date: 2022.11.12

Number: HT-AT-SP-0001

Make	Revised	Approved

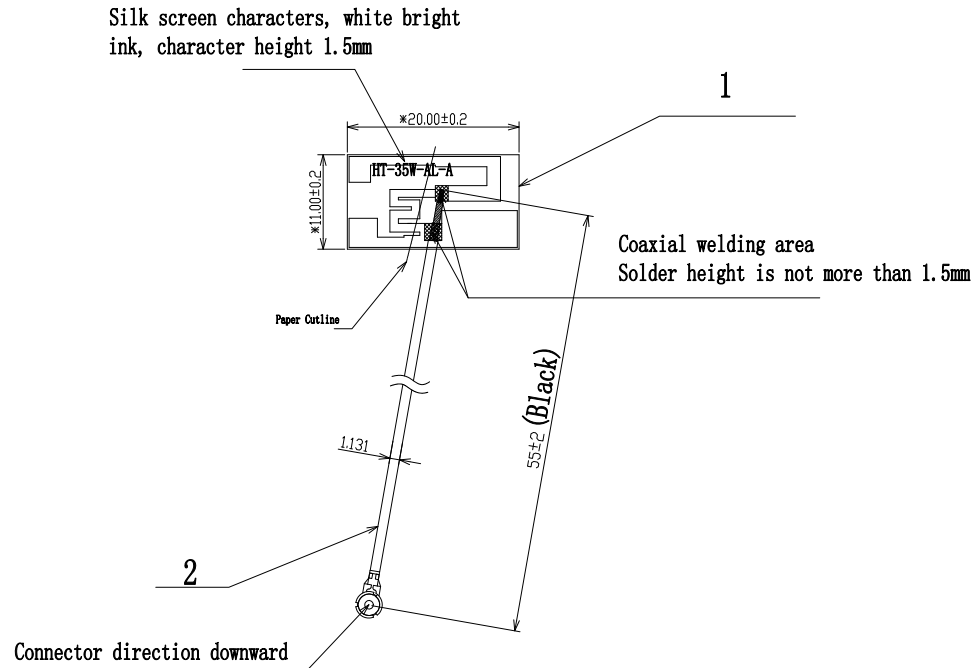
Customer Signature And Approval		
Contractor	Examine	Approved

Content

- 1、 Cover
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- 3、 Engineering Drawing
- 4、 Full-size Measurement Report
- 5、 CPK
- 6、 Schematic&Electrical Properties Performance and Test Report
- 7、 Manufacturing Process Flow Chart
- 8、 Reliability Test Report
- 9、 ROHS limited material composition questionnaire &SGS Report
- 10、 Package specification



NO.	DESCRIPTION	DESIGE	DATE
A	Official drawing file	ZYY	2022.07.01



Technical requirement:

1. MATERIAL: Electrolytic copper made of 18/12.5 conventional materials, made of PI. The dotted green line in the figure indicates the outline of the copper layer.
2. Ink: matt black oil
3. The FPC back glue is 3M 9471LSE, and the viscosity should be super strong.
4. The dimension with "*" is the key dimension. Please refer to the tolerance table for unspecified tolerance.
5. The surface shall be free of pressure, scratch and oil stain.
6. The input materials must meet the environmental protection requirements.
7. The drawing dimensions are used to inspect the appearance, function and assembly.

ITEM	PART NAME	P/N	MATERIAL	Q'TY	REMARK
2	HT1888-IC1-A	G.1.22.L.0093	Ø1.13*55MM Black	1	WIFI_Cab
1	HT1888-WIFI-A	G.1.11.L.0190	18/12.5, ED, PI	1	WIFI_FPC

NHAI 浙江海通通讯电子股份有限公司
Zhejiang Haitong communications electronic limited by Share Ltd.

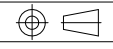
PROJECT NAME: HT1888-35W-AL

PRODUCT NAME: HT1888_WIFI_antenna_ASSY

NO TOLERANCE NOTED		
ONE PLSC	X, X	±0.15
TWO PLACE	X, XX	±0.10
ANGULAR DIM	X, °	±1.0°
HOLE DIA	X, X	±0.10

APPD:		HT Item No:	B. 1.05. L. 0117
CHKD:			
DWN:	ZYY	Customer Item No:	1.05.10.0006
SCALE:	FULL	PAGE:	1/1
UNIT:	mm	REV:	A
	SIZE:	DRWING NO:	

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Product Dimension Inspection Report

The project name	35W-AL	Drawing specification/ver	35W-AL/A	Mold number/cavity number	/	Measuring time	2022. 11. 11
The sample status	Mass production,	Sample material/process	FPC+CABLE	Temperature, humidity	25C° 55%	Measuring the signature	Zhang ling
detection	There are 6 key dimensions $\leq 80\%$ in the drawing, 0 in early warning and 0 in $>$ in 100%.					Signature of project manager	Zhu Shuang
Conclusion:	There are 7 pieces of general size $\leq 80\%$ on the drawing, 0 pieces of early warning, and 0 pieces of $>$ 100%.					Qc signature	Cao Jilei

The drawings specifications					Test results					Testing information					Processing opinion		Measuring tool		
Size number	Size of nature	Basic dimensions	The tolerance	The tolerance	Sample 1	Sample2	Sample3	Sample4	Sample5	Tolerance range determination				Maximum deviation reference				Comments from supplier quality control/pr	Customer comments
										$\leq 50\%$	$\leq 80\%$	warning	$> 100\%$	The worst data	Tolerance percentage	Exceed the tolerance			
1	★	44.30	-0.20	0.20	44.29	44.26	44.26	44.28	44.26	✓				44.26	20%				C
2	★	22.85	-0.20	0.20	22.83	22.84	22.84	22.82	22.84	✓				22.82	16%				C
3		409.00	-2.00	2.00	409.60	408.90	408.70	409.40	409.10		✓			409.60	30%				C
4		1.13	-0.05	0.05	1.13	1.13	1.12	1.13	1.14		✓			1.14	20%				C
5																			
6																			
7																			
8																			

Remark:

Code description of measuring tools:

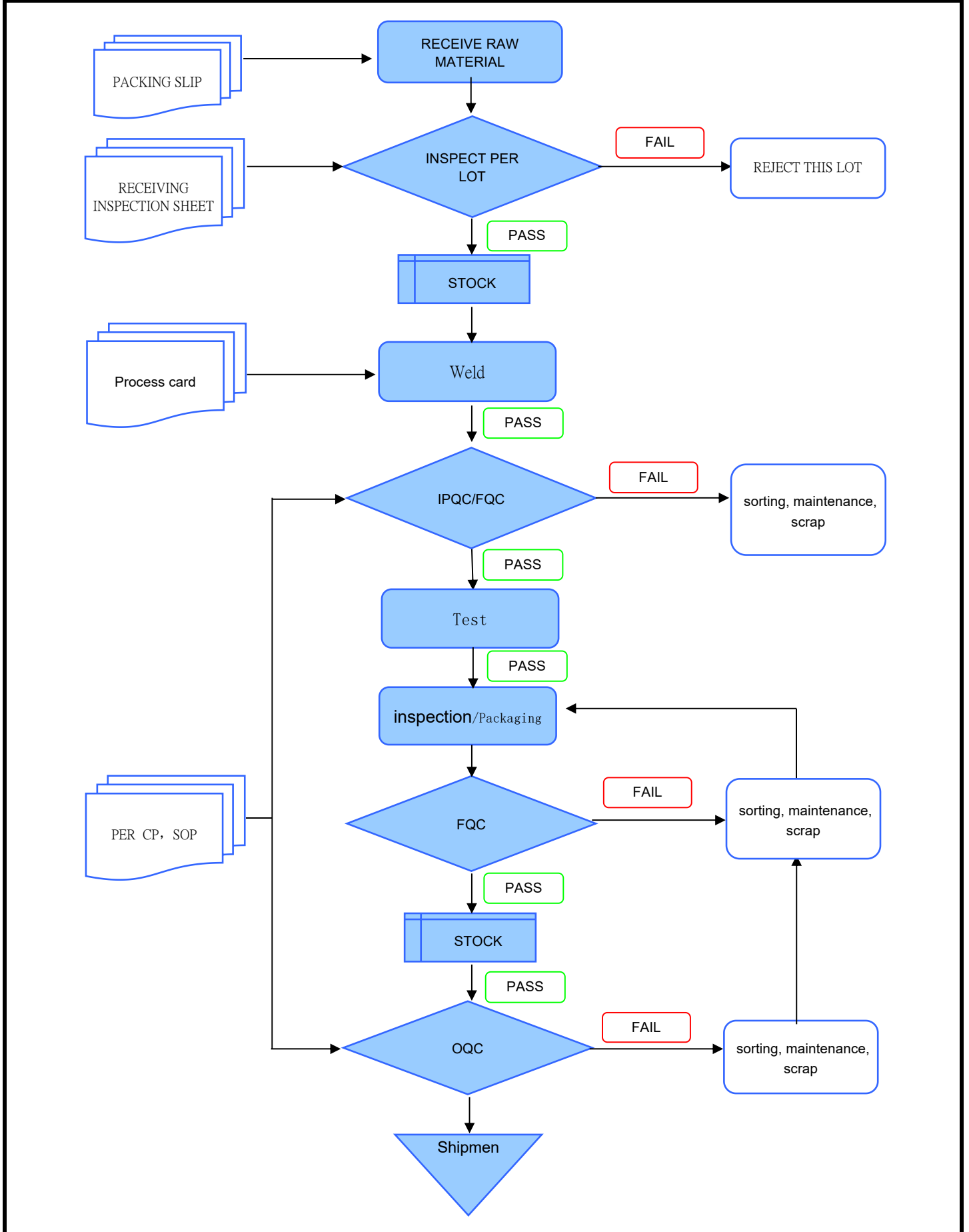
V: cubic C: quadratic BG: block gauge PG: needle gauge DG: depth gauge PG: needle gauge
 P: projector DC: caliper RG: R gauge M: micrometer HG: height TC: true roundness meter
 E: tool microscope F: plug gauge DT: lever table DI: depth table ★ : key

CPK Report

The product name	MAIN-ASM			supplier	Zhejiang Haitong Communication Electronics Co., Ltd.
The customer material no.	1.05.10.0006			That confirm	Zhang ling
Die no.	/			Inch/mm	MM
Acupuncture point no.	/			The name of the material	PI
version	A			The date of	2022.11.11
Size of the serial number	1	2			
Nominal size	44.30	22.85			
Is the tolerance	0.20	0.20			
Minus tolerance	-0.20	-0.20			
Specification limit	44.50	23.05			
Specification limit	44.10	22.65			
1	44.33	22.88			
2	44.33	22.88			
3	44.33	22.88			
4	44.37	22.92			
5	44.34	22.89			
6	44.33	22.89			
7	44.35	22.90			
8	44.36	22.91			
9	44.27	22.82			
10	44.33	22.88			
11	44.26	22.81			
12	44.31	22.86			
13	44.33	22.88			
14	44.34	22.89			
15	44.28	22.83			
16	44.30	22.85			
17	44.29	22.84			
18	44.35	22.90			
19	44.27	22.82			
20	44.26	22.81			
21	44.24	22.79			
22	44.23	22.78			
23	44.27	22.82			
24	44.34	22.89			
25	44.23	22.78			
26	44.24	22.79			
27	44.28	22.82			
28	44.27	22.82			
29	44.29	22.81			
30	44.34	22.89			
31	44.27	22.81			
32	44.35	22.90			
MAX.	44.37	22.92			
MIN.	44.23	22.78			
AVERAGE	44.30	22.85			
STDEV	0.04	0.04			
CP	1.60	1.54			
Cpk	1.57	1.53			
Measuring tool	quadratic	quadratic			



Flow chat

Part name	MAIN-ASM	Make	RenKankan	Production date	2022/11/11
Material No	1.05.10.0006	Confirm	LinHaifeng	Confirmation date	2022/11/11



(Constant temperature and humidity)

Form No: HT-FM-PZ112

(Product name)		MAIN-ASM		(Part number)		1.05.10.0006		(laboratory temperature)		25℃		(Report No.)		ER20221108001	
(Date)		2022/11/8		(documentation)				(laboratory humidity)		66%		(Client Dept.)		RenKankan	
(Experiment reasons)		<input checked="" type="checkbox"/> (new product) <input type="checkbox"/> (product to be out spec)		<input type="checkbox"/> (ECN later) <input type="checkbox"/> (daily Experiment)		(Housing tool cavity)		/		(Metal tool)		/			
(Quantity)		1PCS		(Description)		After the experiment, the appearance of the product was tested to be free of oxidation and glue opening		(Plastic material)		FPC+CABLE		(Metal material)		/	
(Order)	(Experiment project)	(Samples Qty.)	(Experiment equipment)	(Experiment method)		(Experiment note of product)		(Experiment result)		(Conclude)					
1	(Constant temperature and humidity)	1PCS	(High and low temperature test chamber)	(Put the sample into a constant temperature and humidity box with the temperature of 45±3c and relative humidity of 90 ~ 95% for 48h, and then conduct the test after recovering for 2h at normal temperature.)		(After the experiment, the appearance of the product was tested to be free of oxidation and glue opening)		(After the test, the product appearance has no discoloration, deformation, blistering and warping.)		OK					
		(Before experiment)				(Post experiment pictures)									
(Experiment Photo)															
(Comments):															
(Approved by): CaoJilei				(Checked by): /				(Name of operator): ZhangLing							

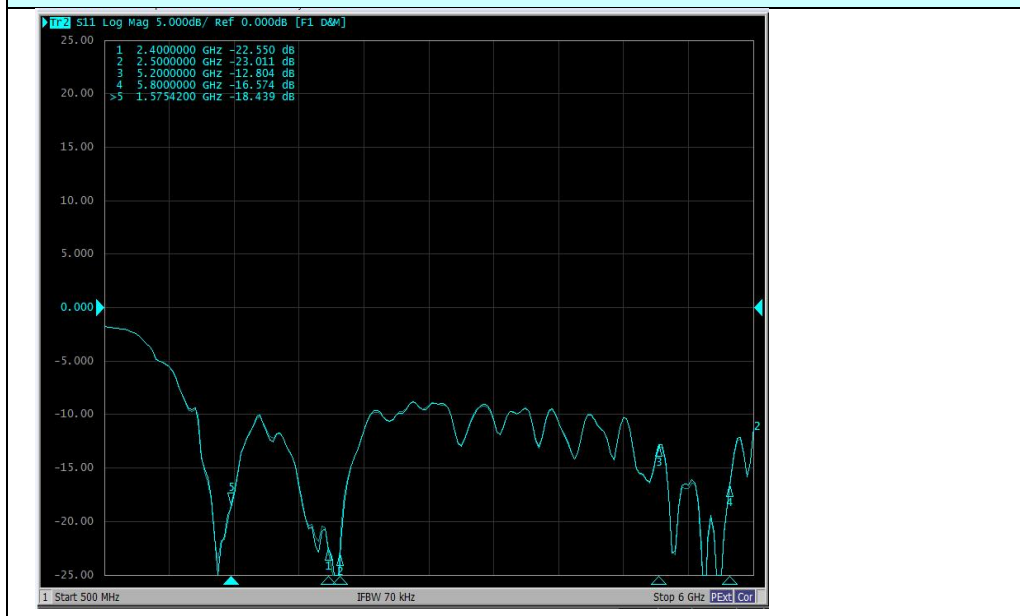
Electrical performance report

Antenna Engineer	Zhengyouqiang		
Test Engineer	Yanjiajun		
Review	Zhouzhenbang		
testing environment	temperature	22°C	humidity 65%
Machine status	Mainboard version		
	PA match	ANT switch-matching-PA	
	Antenna version		
	Antenna matching	ANT-matching-ANT switch	
	Software version		
	other		

Reflection loss test results

Test equipment	(Aglient E5071C)
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WIFI MAIN-S11



Passive efficiency test results

Test equipment	(Stimo24*ZVL)
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frequency (MHz)	efficiency	Average gain	Maximum gain	frequency (MHz)	efficiency	Average gain	Maximum gain
1550	53%	-2.8	1.2	5200	29%	-5.3	1.7
1555	53%	-2.8	1.3	5220	29%	-5.4	1.3
1560	53%	-2.8	1.4	5240	29%	-5.4	1.2
1565	53%	-2.8	1.4	5260	28%	-5.5	1.8
1570	54%	-2.7	1.4	5280	30%	-5.3	1.7
1575	54%	-2.6	1.4	5300	28%	-5.5	1.3
1580	55%	-2.6	1.4	5320	29%	-5.4	1.8
1585	55%	-2.6	1.3	5340	29%	-5.4	1.9
1590	55%	-2.6	1.1	5360	27%	-5.7	1.6
1595	55%	-2.6	1.9	5380	25%	-6.0	1.3
1600	55%	-2.6	1.6	5400	25%	-6.1	1.4
				5420	25%	-6.1	1.4
				5440	25%	-6.0	1.3
2400	48%	-3.2	1.4	5460	25%	-5.9	1.3
2410	48%	-3.2	1.8	5480	27%	-5.7	1.9
2420	49%	-3.1	1.5	5500	27%	-5.6	2.1
2430	49%	-3.1	1.7	5520	27%	-5.6	2.1
2440	50%	-3.0	1.6	5540	27%	-5.6	2.1
2450	50%	-3.0	1.5	5560	27%	-5.7	2.1
2460	50%	-3.0	1.8	5580	26%	-5.8	1.9
2470	48%	-3.2	1.9	5600	26%	-5.8	1.9
2480	47%	-3.3	2.0	5620	26%	-5.8	2.0
2490	47%	-3.3	2.2	5640	25%	-6.1	1.7
2500	48%	-3.2	2.4	5660	25%	-6.1	1.3
				5680	25%	-6.1	1.4
				5700	24%	-6.3	1.3
				5720	24%	-6.2	1.7
				5740	24%	-6.3	1.5
				5760	22%	-6.5	1.4
				5780	21%	-6.7	1.5
				5800	22%	-6.7	1.7

WIFI antenna OTA test results

Test equipment	GTS+CMW500
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MAIN			
	CH	TRP	TIS
11b 11M	1	14.2	
	7	14.5	
	13	16.1	-85.3
11a 6M	36	11.6	
	100	9.2	
	165	10.4	-86.9



Survey of restricted substance composition

Supplier (agent) :

Product information supplied				
Customer material code	Material name/model number	Supplier material no	manufacturers	Green material identification
MAIN-ASM	1.05.10.0006	B.1.05.L.0117	Haitong communication electronics co. LTD	

Product composition information												
The serial number	Part name	Parts material,	Component supplier	Third-party test report		Limit material content PPM						note
				The date of	Serial number	(Pb)	(Cd)	(Hg)	(Cr ⁶⁺)	(PBB)	(PBDE)	
1	FPC	Base material		2021/7/3	WTH21H06062745C-1	ND	ND	ND	ND	ND	ND	
		Glue		2021/9/4	SHAEC2118730101	ND	ND	ND	ND	ND	ND	
		Ink		2021/9/6	ETR21805816	ND	ND	ND	ND	ND	ND	
		Text ink		2021/10/29	ETR21A04957M01	ND	ND	ND	ND	ND	ND	
		Gold plated		2021/9/3	A2210362801101C	ND	ND	ND	ND	ND	ND	
2	CABLE	PBT		2021/8/13	ETR21801353	ND	ND	ND	ND	ND	ND	
		Ni		2021/9/27	A2210394436101002C	ND	ND	ND	ND	ND	ND	
		Au		2021/9/27	A2210394436101001C	ND	ND	ND	ND	ND	ND	
		C5210		2022/2/18	CANEC2201952008	ND	ND	ND	ND	ND	ND	

Note:

1. Please use xx and × to indicate whether the content of the six restricted substances is compliant or not;The compliance person is expressed as "zero";Noncompliance is expressed as ×.
2. PPM limit value: cadmium <100 PPM.Lead/mercury/hexavalent chromium /PBB/PBDE<1000 PPM.
3. The total amount of lead, hexavalent chromium, mercury and cadmium in the packaging materials shall not exceed 100ppm.
- 4.Br< 900 ppm, Cl< 900 ppm, Br + Cl< 1500 ppm
4. Please fill in this form and seal it.(provide stamped paper or scanned PDF document)
5. If the limited substance exceeds the standard but meets the exemption terms, please explain in the remarks.
6. The third-party test report shall be valid for one year

Fill in person: CaoJilei

Company/department: quality department

Seal:

General requirements

1. Explain customer name, project name, model number,
2. Picture description of inner and outer boxes, packing method, number of layers, quantity of single layer, etc
3. Fill in the name and quantity of packaging materials in the remarks column
4. Signature and date of quality supervisor

The picture is for reference only, has not made the goods in large quantities, is not the real product.Process the same

1. Photos of PE bags product packaging
2. Inner box photo packaging



3. Picture of the smallest package in the case



4. Photos after the whole package is sealed



5. Picture of the face of the label on the surface of the entire carton



Product material no. :	1.05.10.0006	
The product name	MAIN-ASM	
Product version:	A	
The packing way	PE film packaging	
PE bags	Inner box	Carton
50 packets	40pack (50*40=2000PCS)	1000PCS
carton	Quantity of inner container:	50*40*10=20000

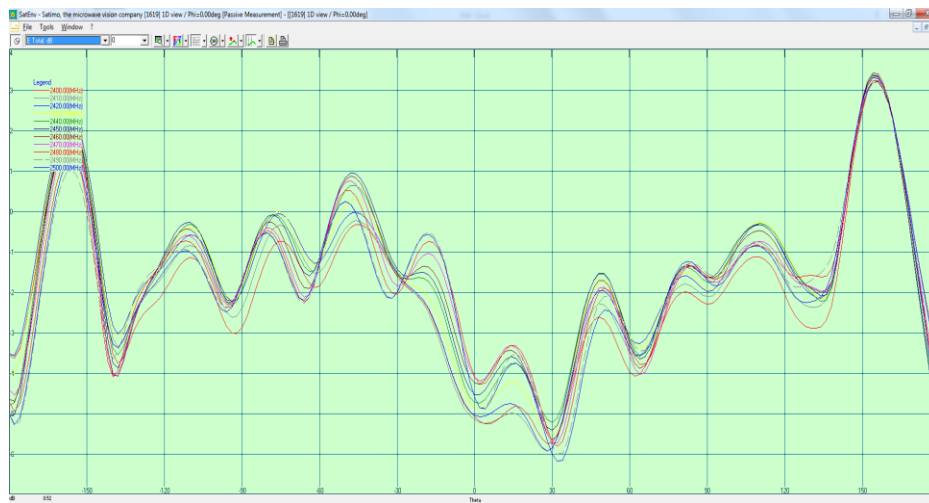
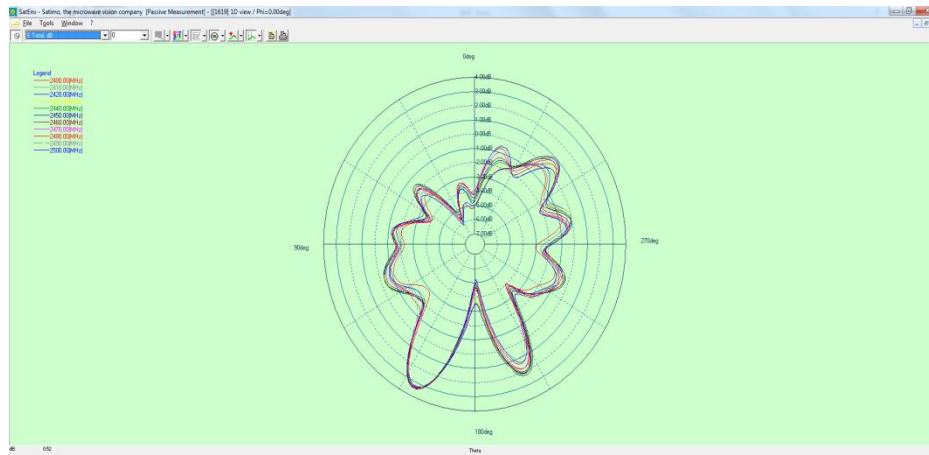
Remark:

Pictures are only for your reference.

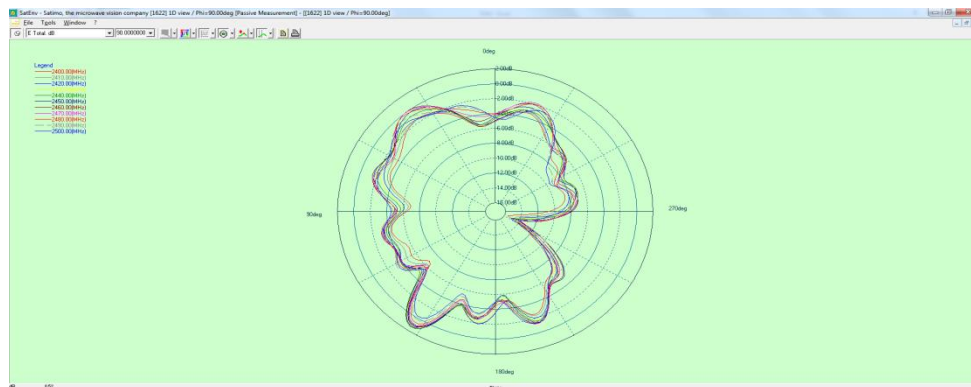
1. Storage conditions: temperature: 17 ° C - 23 ° C, humidity: 55 rh - 65 rh (2) stored in low temperature, low humidity, no corrosive gas environment.Please use it within one week after opening the package.

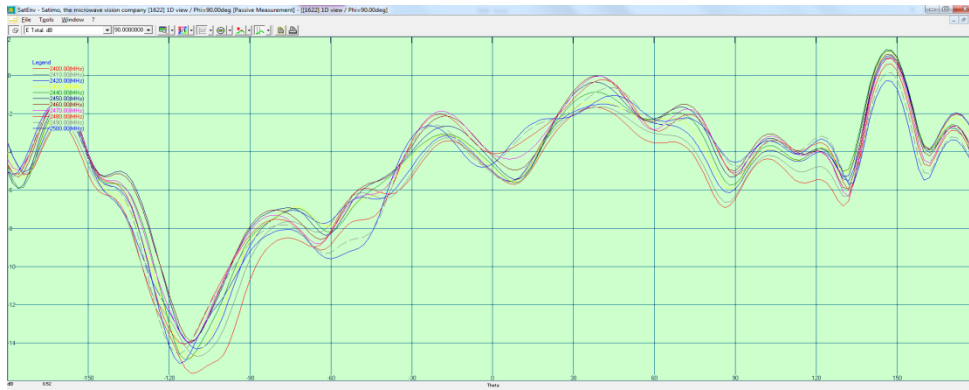
Signature:Cao Jilei

Phi=0



Phi=90





Theta=90

