



SPECIFICATIONS

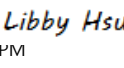
DESCRIPTION	Ceramic Chip Antenna
MAKER	Pulse Electronics
MAKER PART NAME	ANT1608LL14R2400A
MAKER SPECIFICATION	
SOLUM CODE No.	4201A0400020
APPLIED TO	BLE Mask
REMARKS	(REV 1.0)

Gross Weight(kg)	Net Weight(kg) / 1 Reel	Unit Weight(Kg)
0.026	0.016	0.000004

This is to certify that all of parts shipped definitely can meet the requirements of RoHS and Halogen Free(HF)

本承认愿将证明给贵司供应的所有部品完全符合RoHS以及HF的要求条件

본 승인원은 귀사에 납품하는 모든 부품에 대해 RoHS 및 Halogen Free (HF) 요구조건을 만족하는 것을 증명합니다.

MADAMS I.D	환경유해물질 등록 사이트 ID (없을 시, 미 기재)	DATE	Date of Issue
DESIGN	CHECK	APPROVAL	
Pulse Electronics Korea Edgar choi(최선길) / Sales		Pulse Electronics Corporation Libby Hsu / LTCC Business Unit PM	
2022. 11. 09		2022. 11. 09	
A TERM OF VALIDITY	Over at least 15 YEARS		

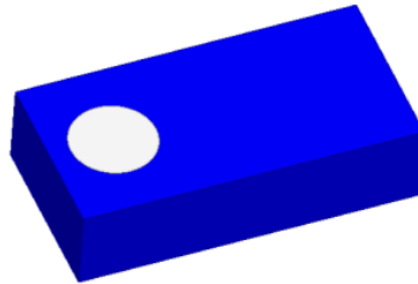
Indemnification

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Supplier Factory 1	Pulse (Suzhou) Wireless Product Co., Ltd.	TEL	+86512.68088880
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URL	https://www.pulseelectronics.com/		



ANTENNA SPECIFICATION



SOLUM code : 4201A0400020

Pulse code : ANT1608LL14R2400A

ANT Type : Ceramic Chip

Product Plant : Pulse (Suzhou) Wireless Products Co., Ltd

Nov 09. 2022 _ 1st approval sheet, Document updated

		Prepared (RF, Mech.)	Checked (Chief engineers)	Quality (Quality Engineer)	Approved (Project Manager)
PULSE	Name	.	Edgar choi	Tomas Wu	Libby Hsu
	Signatures	.			<i>Libby Hsu</i>

PULSE ELECTRONICS KOREA

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<http://pulseelectronics.com>

◆ REVISION HISTORY

Date	Version number	Page	Done by	Description (if drawing has changed, picture of change has to be shown here)	Confirmed by		
					R&D	QC	PM
2022.11.09	1.0		Edgar	Document created			

◆ MASS PRODUCTION YIELD RATE

	Date	Yield Rate	Defec ts q'ty/ Toal Input q'ty	Productivity Capacity	W orst defec ts
2022	M ar (2022)	80.39%	121/617	1.Productivity : 1K pcs/HR 2.Capacity : 50M /Month	V /C 83% RF99% Main lack : poor appearance (PAD electrode weld) : 114K pc PAD electrode weld : Datasheet is not regulated , In-plant testing specifications are tightened
	Jun (2022)	81.4%	13/70		RF perform ance foil : 3 K pc 2.poor appearance (PAD electrode weld) : 10K pc
	Jul (2022)	Not produced			
	A ug (2022)	81.94%	164/908		1.RF perform ance foil : 36 K pc 2.poor appearance (PAD electrode weld) : 128kpc
	Sep (2022)	82.10%	17/95		V /C 84% RF98% Main lack : poor appearance (PAD electrode weld)

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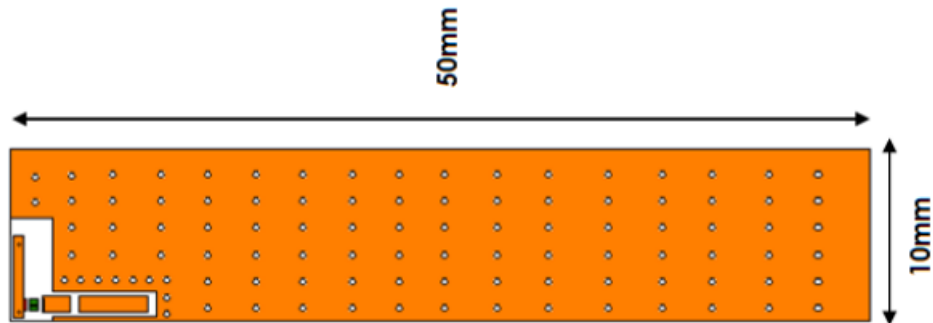
1 TECHNICAL SPECIFICATIONS

Electrical Specification Sheet			
SET TYPE			
Operating Band		BLE	2400~2500Mhz
Hand Set	V.S.W.R	BLE	
		2400 MHz	2500 MHz
		1.90	2.54
H plan E1 plan E2 plan			
Input Impedance		50 (Ω)	
Polarization		Vertical / Linear	
Power (Max)		1Watt	
Matching Value		3.3nH 4.7nH RF Signal	
Mechanical Specification Sheet			
Contact form		SMD	
Full length		W x L x H (1.6x0.8x0.4mm)	
Weight		Low weight (4 mg)	
Operate temperature		-40/+105°C	
Termination		Ag (Environmentally-Friendly Leadless)	

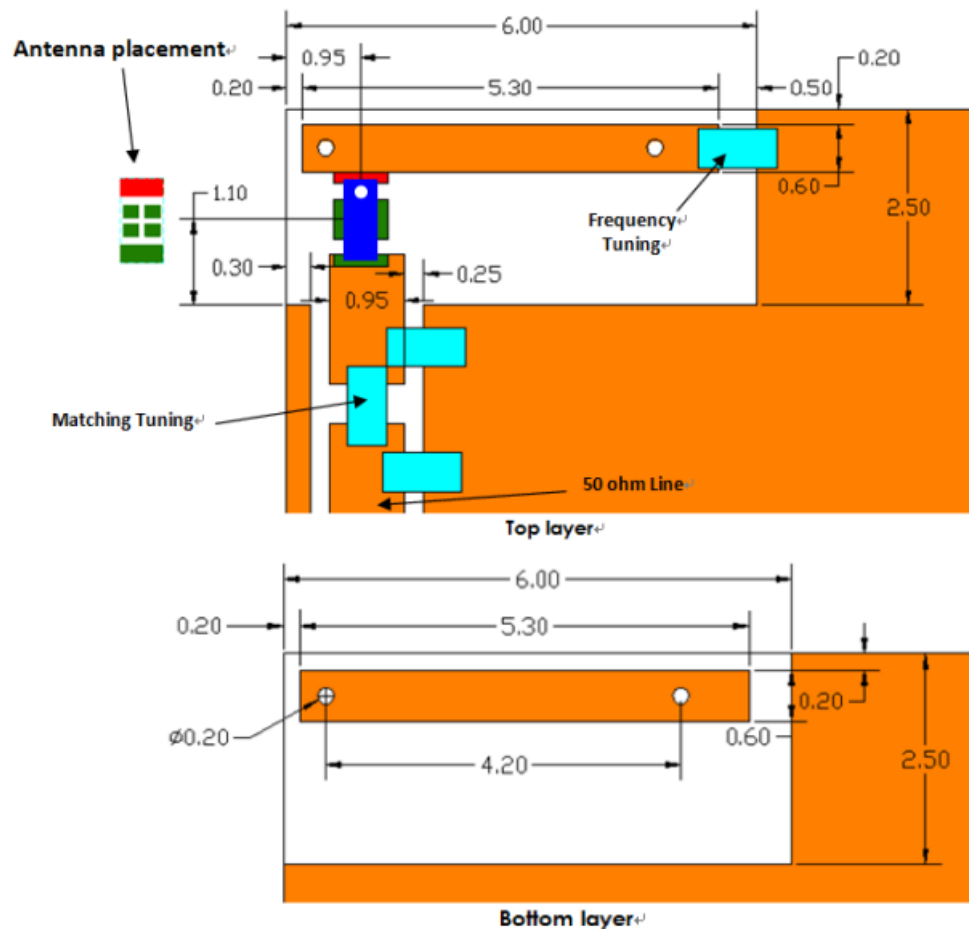
2 OTHER SPECIFICATION/PCB LAYOUT

Ground cleared under antenna, clearance area 6.0 mm x 2.5 mm

Recommended test board layout for electrical characteristic measurement, test board outline size 50 x 10mm



Feed line should be designed to match 50 Ω characteristic impedance, depending on PWB material and thickness.



Matching and tuning component values depend on application and surrounding mechanics / materials.

3 MEASUREMENT SET UP FOR REAL SET

3.1 Figure of VSWR Jig

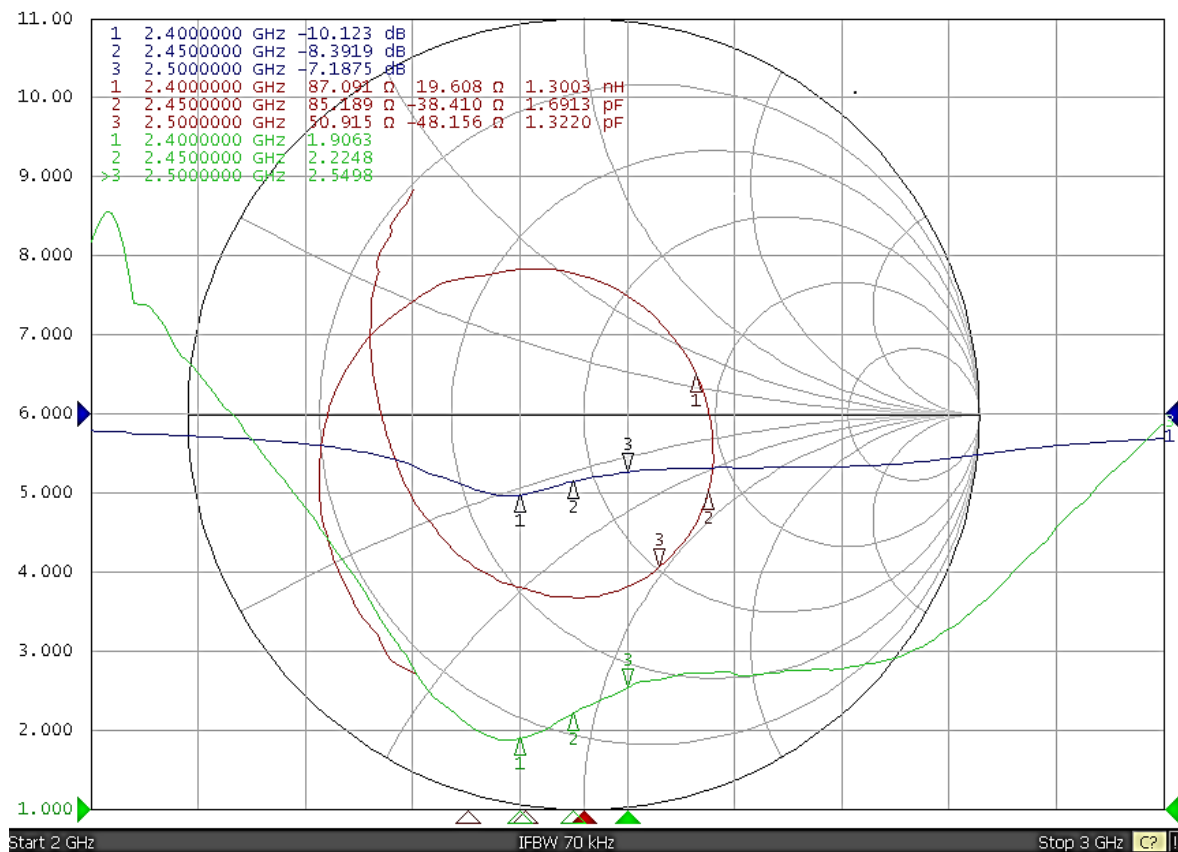


Figures 2-1.1 Measurement Setup of SOLUM BLE MASK device.

4 MEASUREMENT RESULTS

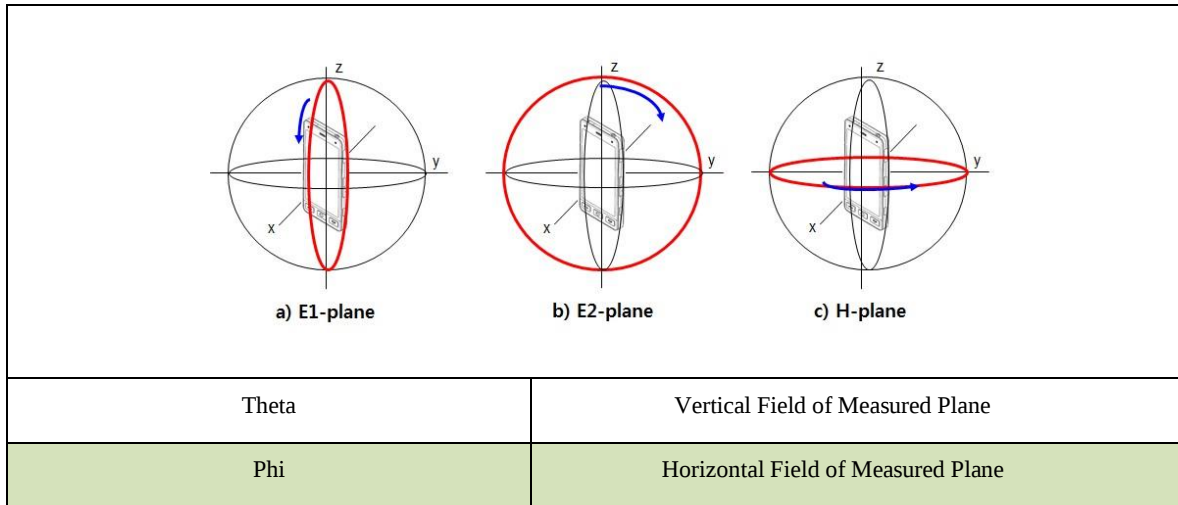
Typical VSWR Curve of **SOLUM BLE MASK device** Antenna are shown on figure below

4.1 VSWR of Set

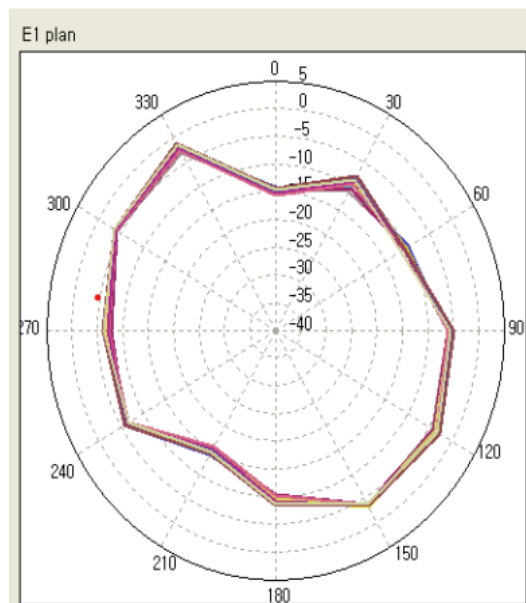


5 FREE SPACE 2D GAIN DATA

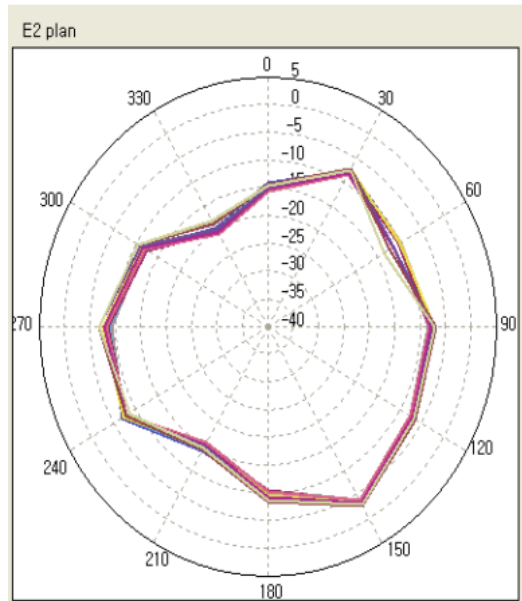
These typical results are measured in **SOLUM Mask device** Chassis rev.0.1



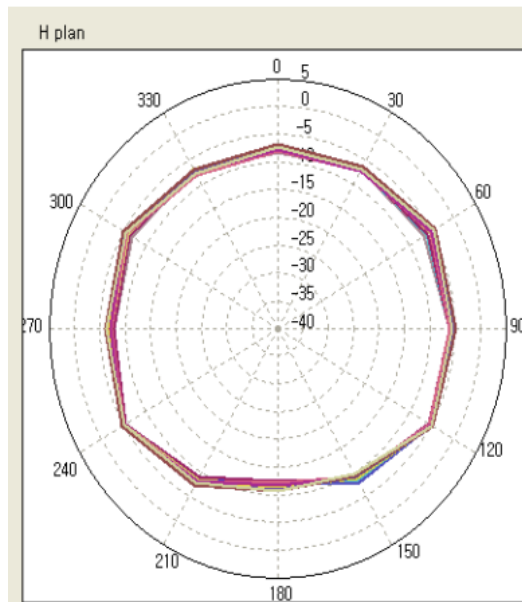
5.1 E1 _ Plan



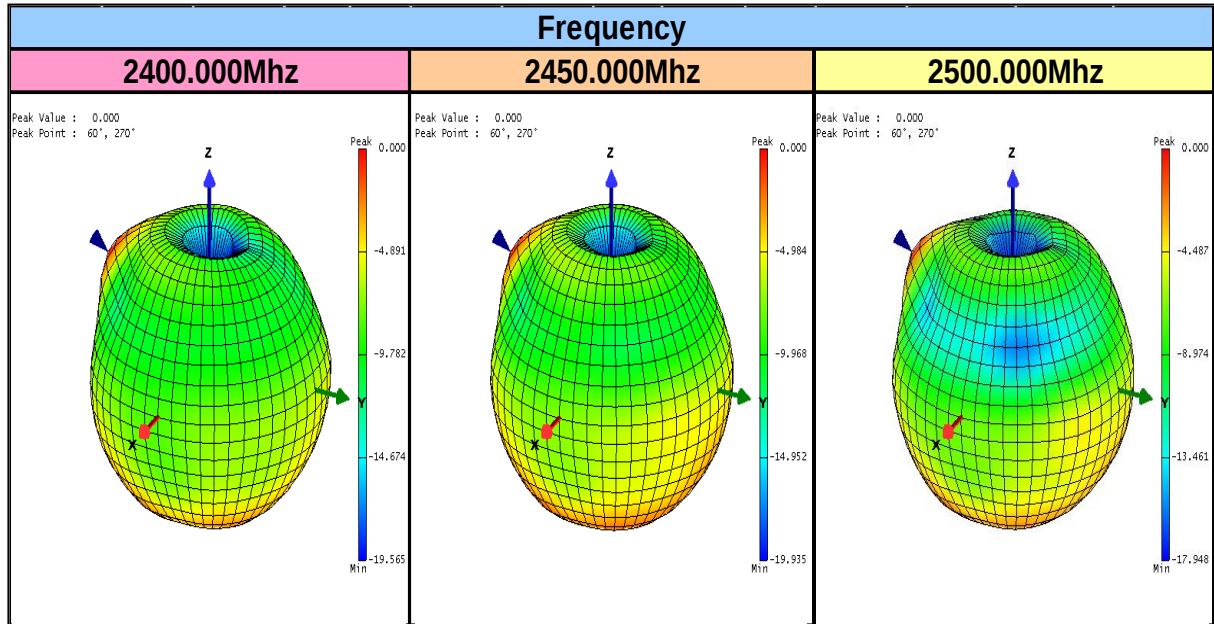
5.2 E2_Plan



5.3 H_Plan



6 FREE SPACE 3D GAIN DATA



Frequency	Peak Value		Minimum Value		Avg. Gain	Efficiency
[MHz]	Value[dBi]	Degree	Value[dBi]	Degree	[dBi]	[%]
2400	-2.292	150 / 300	-19.565	120 / 180	-6.521	22.18%
2410	-1.715	150 / 300	-19.653	120 / 180	-6.184	23.97%
2420	-1.744	150 / 300	-20.417	120 / 180	-6.353	23.05%
2430	-1.845	150 / 300	-20.383	120 / 180	-6.524	22.16%
2440	-1.368	150 / 300	-19.857	120 / 180	-6.16	24.10%
2450	-0.968	150 / 300	-19.935	120 / 180	-5.89	25.65%
2460	-1.551	150 / 300	-20.686	120 / 180	-6.425	22.67%
2470	-1.102	150 / 300	-20.483	120 / 180	-6.14	24.21%
2480	-0.537	150 / 300	-19.728	120 / 180	-5.759	26.43%
2490	-0.347	150 / 300	-18.622	120 / 180	-5.568	27.62%
2500	-0.618	150 / 300	-17.948	120 / 180	-5.986	25.08%

7 MATCHING NETWORK

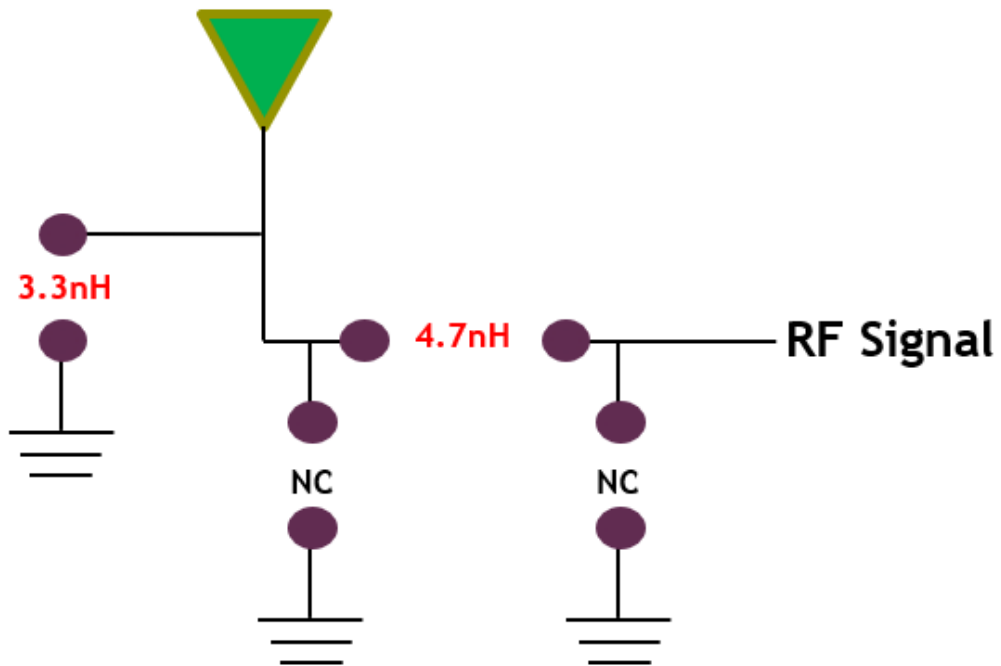


Figure 6-1. Matching network

8 ENVIRONMENTAL TESTS

8.1 Ceramic Chip Antenna Environmental Test

➤ PURPOSE

The report prepared by QA-LAB shows the evaluation result for ANT1608LL14R2400A product. The test items follow international specification . The purpose is for customer approval.

➤ TEST Product

Function	Size	Working Frequency
ANT	1608	2.4~2.484GHz

➤ TEST Summery

No.	Test Item	Result
3.1	Physical Dimension	0/10
3.2	Electrical Characterization	0/10
3.3	Temperature Shock	0/20
3.4	Temperature Cycling	0/20
3.5	High Temperature Exposure	0/40
3.6	Low Temperature storage	0/20
3.7	Biased Humidity	0/20
3.8	Solderability	0/20
3.9	Vibration	0/20
3.10	Mechanical Shock	0/20
3.11	Board Flex (SMD)	0/20
3.12	Adhesion (SMD)	0/20
3.13	3 *Times Reflow	0/10

➤ TEST Result



ANT1608LL14R240
0_Reliability report

9. Recommendations For Ceramic Chip Antenna Storage

9.1 Storage time

Products should be used within 6 months from the day of manufacturers package-ing even when they are stored under below mentioned conditions. Longer storage period may decrease the component solderability

9.2 Storage environmental conditions

To maintain solderability of Pulse ceramic products care must be taken to control the storage and use conditions:

- Do not store or use products in a corrosive atmosphere, especially where chloride, sulphur or sulfide, alkali or acid salts exist in the air. Corrosive gases may cause oxidation of electrodes and reduce solderability
- Keep temperature and humidity stable and do not exceed the below men-tioned minimum and maximum conditions: Temperature: -10 to +30 Deg C Humidity: below 60% RH
- Do not store the products under direct sun light. It is recommended to keep the products in manufacturers packing (tape&reel) until the time of assembly and soldering process. Air tight vacuum package is recommended in the conditions where it is know to be some corrosive gases.

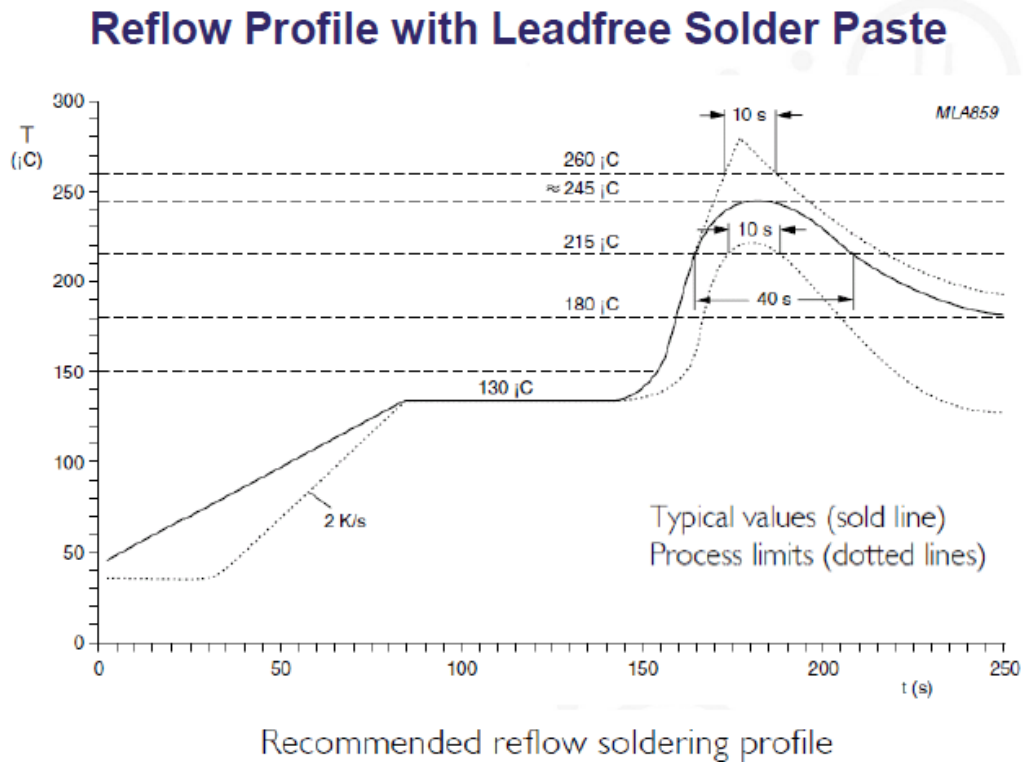
9.3 Handling

Do not touch the components with bare hands. Protective gloves must be used to prevent contamination of terminals which may cause reduced solderability. Do not touch or damage the silver plated surface by any sharp objects. Soft materials (plastic, wood etc.) must be used if tweezers or other tools are used to pick the components. Avoid any excess mechanical shock or vibration during storage and handling.

10. Recommendations For Soldering

10.1 Recommendation for reflow soldering process

Printing stencil thickness 0,15 - 0,25 mm is recommended for the solder paste. The best range of soldering temperature was advised to be controlled between 215°C and 260 °C. The temperature profile recommendations for reflow soldering process is presented below.

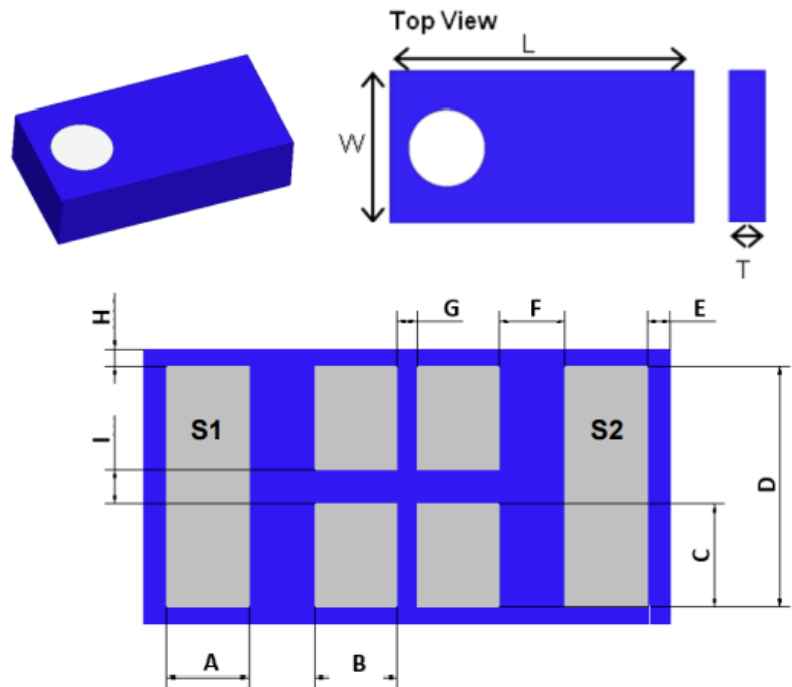


11. ANTENNA DIMENSION

MECHANICAL DRAWING

Dimension	
L (mm)	1.60 ±0.15
W (mm)	0.80 ±0.15
T (mm)	0.40 (Max.)
A (mm)	0.25 ±0.15
B (mm)	0.25 ±0.15
C (mm)	0.30 ±0.15
D (mm)	0.70 ±0.15
E (mm)	0.07 ±0.07
F (mm)	0.20 ±0.10
G (mm)	0.06 ±0.05
H (mm)	0.05 ±0.05
I (mm)	0.10 ±0.05

Terminal name	Function
S1	Soldering Pad
S2	Feeding Pad



12. PART LIST

Raw material Image	Part Number	Supplier Vndor	WEIGHT (mg)	No	Raw material name (Homogeneous material) 原材	Raw material vendor 原材供应	WEIGHT (mg)	WEIGHT (%)	Substance material name (Chemical formulary) 化学	Material's Cas-No	WEIGHT (mg)	Type
	ANT1608LL1 4R2400A	Pulse (Suzhou) Wireless Products Co., Ltd	2.2	1	Ceramic substrate	YAGEO	2.002	55.330%	Al2O3	1344-28-1	1.10770660	Inorganic
								25.580%	SiO2	14808-60-7	0.51211160	
								8.283%	ZnO	1314-13-2	0.16582566	
								4.363%	CoO	1307-96-6	0.08734726	
								6.444%	TiO2	13463-67-7	0.12900888	
				2	Marking ink	YAGEO	0.00066	14.647%	Al2O3	1344-28-1	0.00009667	Inorganic
								5.460%	TiO2	13463-67-7	0.00003604	
								79.893%	SiO2	14808-60-7	0.00052729	
				3	Conductive electrode	YAGEO	0.11198	100.000%	Ag	7440-22-4	0.11198	Inorganic
				4	Termination electrode	YAGEO	0.08536	100.000%	Ag	7440-22-4	0.08536	Inorganic

13. RF TEST REPORT(CPK)

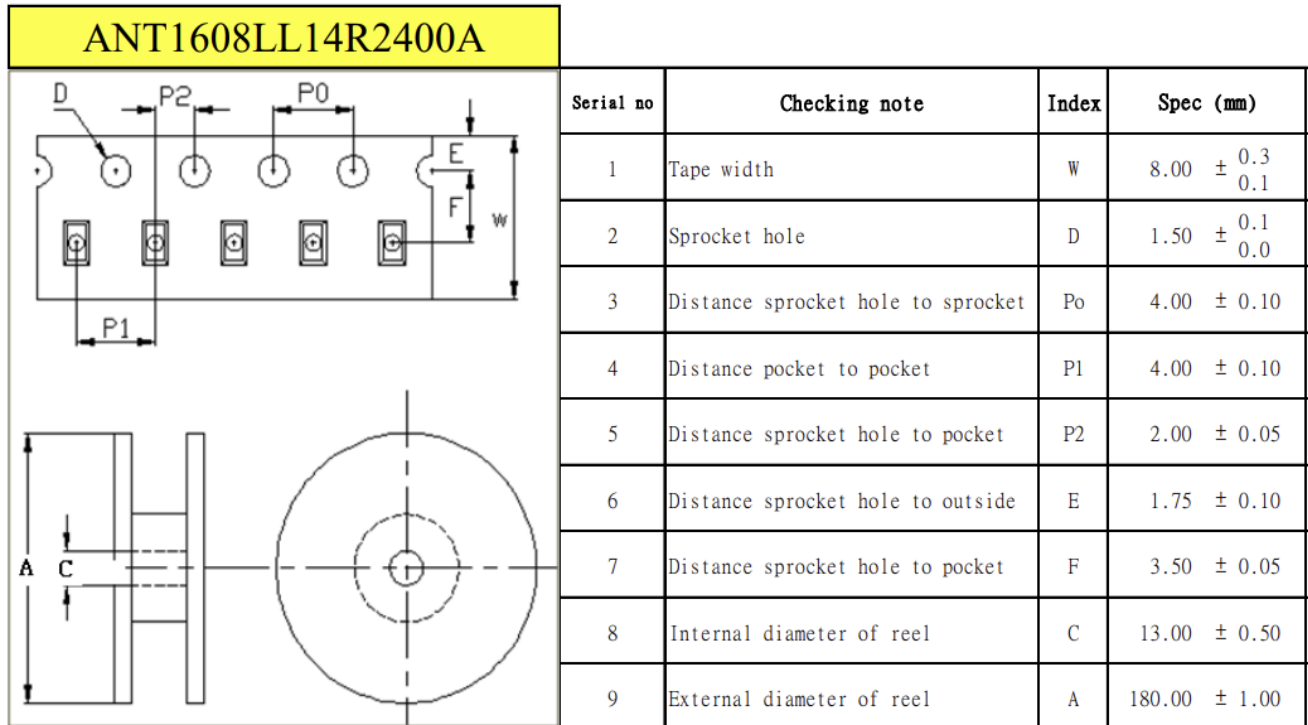
RF Test Report (CPK)			
Part Number	ANT1608LL14R2400A	Lot Number	P2L0750002
Customer Name	NA	Reportad Date	2022.03.02
TOTAL QTY	30 Pcs		
Measurment Check Data			
Test item	4.357G	5.093G	
	VSWR<2	VSWR<2	
1	1.575	1.850	
2	1.617	1.863	
3	1.615	1.848	
4	1.718	1.886	
5	1.565	1.914	
6	1.589	1.867	
7	1.557	1.863	
8	1.576	1.856	
9	1.587	1.864	
10	1.693	1.845	
11	1.567	1.901	
12	1.657	1.863	
13	1.578	1.854	
14	1.557	1.878	
15	1.701	1.865	
16	1.692	1.857	
17	1.612	1.854	
18	1.690	1.867	
19	1.562	1.874	
20	1.655	1.824	
21	1.674	1.882	
22	1.671	1.857	
23	1.627	1.866	
24	1.685	1.871	
25	1.696	1.836	
26	1.677	1.845	
27	1.615	1.834	
28	1.661	1.880	
29	1.567	1.877	
30	1.593	1.859	
Statics	Characteristic1	Characteristic2	
Average=	1.628	1.863	
Std.Dev=	0.053	0.019	
Min=	1.557	1.824	
Max=	1.718	1.914	
3 Std.Dev=	0.159	0.057	
CPL=	*	*	
CPU=	2.341	2.417	
Cp=	*	*	
Cpk=	2.341	2.417	

14. TRAY AND SHIPPING REQUIREMENT

14.1 Reel Packing Condition

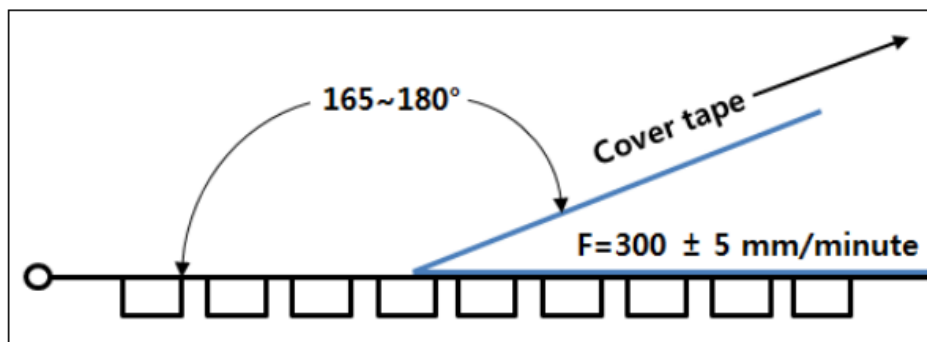
Tape and reel packing is used. Carrier tape, reel and box dimensions are presented in following pictures.

Carrier tape



14.2 Peeling strength

Item	Data	Remark
Cover tape adhesion	10~100g	Carrier tape and cover tape open angle 165~180° F = 300 $\pm$ 5 mm/minute



14.3 Packing form

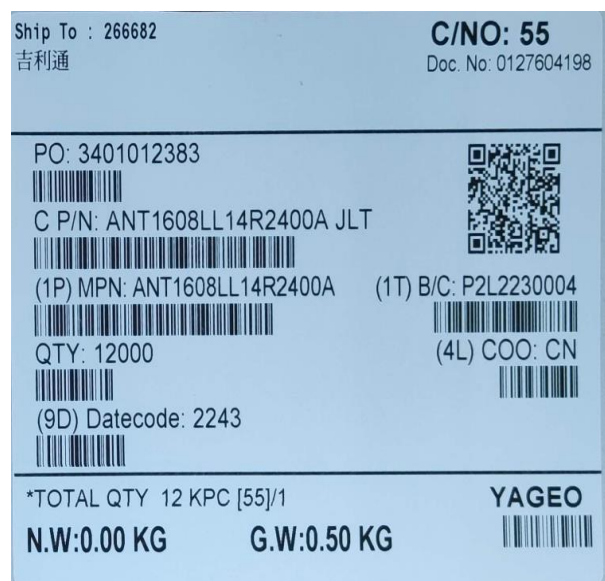
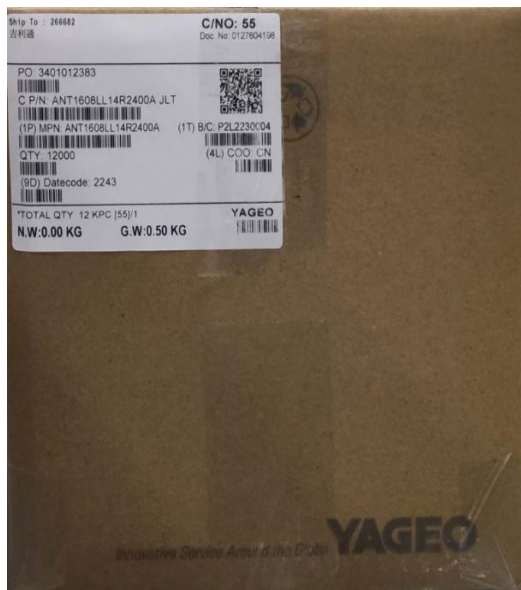
Unit Kg	1real quantity (Kpcs)	1 reel weight kg	Qty reel/each box (Kpcs)	Gross Weight(kg)
0.00221	4	0.02884	60	2.6204

14.5 Packing Label

(Reel)



(Out Box)



PULSE ELECTRONICS KOREA

8F, N Tower Garden, 26, Hwangsaеul-ro 200beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea(13595)

<http://pulseelectronics.com>

15. CONTROL PLAN

		Pulse (Suzhou) Wireless Products Co., Ltd. 普尔思（苏州）无线通讯产品有限公司 QUALITY CONTROL PLAN											
Document No.: CP-SZHS-T206-2 Scope: Ceramic Antenna													
Process	Sub-process	Part Name: CERAMIC ANTENNA Part Number: CERAMIC ANTENNA											
		Production machine	Critical Characteristic			Inspection / Test type	Nominal	Tolerance	Instructions / drawings	Gauge type	Sampling Plan	Function resp.	Action when Out of Control
Sub-supplier final inspection													
0	Powder	/	Electrical property (Er)	/	N	Measurement	Depends on powder (Er(GC-380H) 37-39		Supplier QCP	/	1time/Lot	Supplier	Scrap all the defect powder
		/	Electrical property (Q)	/	N		Depends on powder Q (GC-380H > 45000		Supplier QCP	/	1time/Lot	Supplier	Scrap all the defect powder
		/	Flowability	/	N		<=5minutes		Supplier QCP	/	3times/Lot	Supplier	Scrap all the defect powder
		/	Humidity	/	N		0.05-0.35%		Supplier QCP	/	3times/Lot	Supplier	Scrap all the defect powder
	Silver paste	/	Resistivity	/	N	Measurement	<2.0mOhms/sq		Supplier QCP	/	1time/Lot	Supplier	Scrap all the defect silver
		/	Adhension	/	N	Measurement	>20N		Supplier QCP	/	1time/Lot	Supplier	Scrap all the defect silver
In-coming inspection													
1	Powder	/	Packing	/	N	Visual	/		IQC incoming inspection chart to check.	/	Full inspection	IQC	Return delivery Reclamation
		/	Electrical property	/	N	Supplier report	Depends on powder, (Er(GC-380H) 37-39 Q (GC-380H > 45000		refer to supplier out-going inspection report	/	Refer to supplier out-going inspection report	IQC	Return delivery Reclamation
		/	Flowability	/	N	Supplier report	<=5minutes		refer to supplier out-going inspection report	/		IQC	Return delivery Reclamation
		/	Humidity	/	N	Supplier report	0.05-0.35%		refer to supplier out-going inspection report	/		IQC	Return delivery Reclamation
	Silver paste	/	Packing	/	N	Visual	/		IQC incoming inspection chart to check.	/	Full inspection	IQC	Return delivery Reclamation
		X-Ray	/	RoHS	N	Refer to drawing	Refer to drawing		Incoming inspection procedure	/	1time/half a year	IQC	Return delivery Reclamation
/		Electrical property	/	N	Supplier report	Resistivity: <2.0mOhms/sq Adhension: >20N		refer to supplier out-going inspection report	/	Refer to supplier out-going inspection report	IQC	Return delivery Reclamation	
Assembly process													
1.0	Powder pressing before sintering	Flowmeter	Flowability	/	N	Measurement	<=5minutes		WI-SZHS-T206-S1-2&IP-SZHS-T206-P0_1	/	300g/Time at the begin of each barrel	Operator	Return delivery Reclamation
		Press machine	Tool lifetime	/	N	Defined	/	/	WI-SZHS-T206-S2-1-8& IP-SZHS-T206-P1	/	When maintaining it, need check the stroke times.	Operator	Change over
		Dial height gauge	Height before sintering	/	N	Measurement (SPC)	According to the IP		WI-SZHS-T206-S2-2-2& IP-SZHS-T206-P1	Dial gauge	5pcs/600pcs	Operator	Check powder Adjust press process
		Dig weight gauge	Weight(g) before sintering	/	N	Measurement (SPC)	According to the IP		WI-SZHS-T206-S2-2-1& IP-SZHS-T206-P1	Dial gauge	5pcs/600pcs	Operator	Check powder Adjust press process
		Microscope	Visual	/	N	Visual	/	/	IP-SZHS-T206-P1	/	5pcs/Before production 5片/开始生产前	Operator	Change over
2.0	Burr removal	Vibration equipment	Removal condition	/	N	Setting	/	/	WI-SZHS-T206-S2-3&IP-SZHS-T206-P2	/	100%	Operator	/
			Visual Burr	/	N	Microscope Visual	/	/	IP-SZHS-T206-P2	/	20pcs/2h	Operator	Reset
3.0	Powder Sintering	Kiln	Kiln temperature	/	N	Setting	According to the W1		WI-SZHS-T206-S3-1& IP-SZHS-T206-P3	/	1time/2h	Operator	Check the furnace and re-adjust
			Kiln air condition	/	N	Setting	/	/	WI-SZHS-T206-S3-1& IP-SZHS-T206-P3	/	/	Operator	Reset
			Length Width Height Weight after sintering	/	N	Measurement (SPC)	According to the IP		WI-SZHS-T206-S3-3-2/5/3-3-1& IP-SZHS-T206-P3	Dial gauge	5pcs/600pcs	Operator	Check powder Adjust press process
			Visual	/	N	Visual	/	/	IP-SZHS-T206-P3	/	5pcs/FAI 5片/FAI	Operator	Reset
4.0	Dust cleaning&Vision check1	Vibration equipment	Cleaning time	/	N	Setting	3 minutes	/	WI-SZHS-T206-S4-1& IP-SZHS-T206-P4	/	/	Operator	Re-set
			Vibration strength	/	N	Setting	45Hz	+/-5Hz	WI-SZHS-T206-S4-1&IP-SZHS-T206-P4	/	/	Operator	Re-set
			Visual	/	N	Visual	/	/	IP-SZHS-T206-P4	/	100%	Operator	Reject
5.0	Intermediate storage 1	separated plastic bag	Different cavity separating	/	N	Visual	/	/	WI-SZHS-T206-S3-8& IP-SZHS-T206-P5	/	100%	Operator	Re-sorting
7.1& 7.2& 7.3& 7.4	Silver printing(Laser side, Pad side, End side)	Screen printer	Squeegee pressure	/	N	Setting	35N	/	WI-SZHS-T206-S4-3-4&IP-SZHS-T206-P6	/	check at the beginning of shift	Maintenance	Re-set
			Temperature	/	N	Setting	19-23℃	/	IP-SZHS-T206-P6	/	check at the beginning of shift	Maintenance	Re-set
			Screen tensility	/	N	Measurement	20-35N		WI-SZHS-T206-S4-9&IP-SZHS-T206-P6	/	Maintenance daily checking	Maintenance	Re-set
			Silver thickness	/	N	Measurement	thickness 6-22um	thickness 6-22um	IP-SZHS-T206-P6,	Flash	5pcs/2h	Operator	Reject parts Adjust coating process
			Visual	/	N	Visual	/	/	IP-SZHS-T206-P6	/	100%	Operator	Reject

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8.1& 8.2& 8.3& 8.4	Silver drying(Laser side,Pad side,End side)	Drying oven	Temperature	/	N	Setting	refer to WI define		WI-SZHS-T206-S5-1/5-1-1&IP-SZHS-T206-P7	/	One time / per month	Operator	Reset
9.0& 10.0	Silver sintering&Vision check2	BTU	Adhesive test	/	N	Manual	Stone size: 3.2mm and 7.0 mm Minimum level (N) 25N Stone size: 10mm 12mm and 15mm Minimum level (N) 63N		WI-SZHS-T206-S6-3& IP-SZHS-T206-P8	/	5pcs/shift	Operator	Reject parts Adjust coating process
			Temperature	/	N	Setting	Z1=480±2℃, Z2=650±2℃, Z3=830±2℃, Z4=935±2℃, Z5=927±2℃, Z6=941±2℃, Z7=855±2℃, Cooling=35±5℃, Belt speed =6.5±0.5cm/min		WI-SZHS-T206-S6-4& IP-SZHS-T206-P8	/	One time / per week	Operator	Reset
			Visual	/	N	Visual	/	/	WI-SZHS-T206-S6-5& IP-SZHS-T206-P8	/	100%	Operator	Reject
11.0	Intermediate storage 2	separated plastic bag	Visual	/	N	Visual	/	/	WI-SZHS-T206-S6-2&IP-SZHS-T206-P9	/	100%	Operator	Re-training
12.0	Laser tuning	Laser device	Laser parameters	/	N	Setting	According to the WI		WI-SZHS-T206-S7-3-1 (MT check)	/	Twice per shift	Operator	Reset
			Tuning pattern location	/	N	Setting	According to the Drawing	According to the Drawing	WI-SZHS-T206-S7-3-1 (MT check) IP-SZHS-T206-P10	/	2pcs/4h during production	Operator	Re-adjusted
			RF testing after tuning	/	N	Setting	/	/	IP-SZHS-T206-P10 recording the test data	/	1time/2h	Operator	Re-adjusted
			Visual	/	N	Visual	/	/	IP-SZHS-T206-P10	/	100%	Operator	Re-adjusted
13.0	BTU Post cleaning	BTU	Temperature	/	N	Setting	Z1=480±2℃, Z2=650±2℃, Z3=830±2℃, Z4=935±2℃, Z5=927±2℃, Z6=941±2℃, Z7=855±2℃, Cooling=35±5℃, Belt speed =6.5±0.5cm/min		WI-SZHS-T206-S6-4& IP-SZHS-T206-P11	/	One time / per week	Operator	Reset
14.0	Visual check 3	/	Visual	/	N	Visual	/	/	IP-SZHS-T206-P12	/	100%	Operator	Reject
15.0	RF testing	Analyzer	Frequency	/	Y	Measurement	0	+/-30MHz	IP-SZHS-T206-P13	RF jig	100%	Operator	Reject parts Find out root cause
			Reference antenna	/	Y	Audit	/	/	WI-SZHS-T206-S9-2& IP-SZHS-T206-P13	/	2times per day	Operator&QC	Re-training
			Measurement software	/	Y	Setting	/	/	WI-SZHS-T206-S9-2	/	/	Operator&QC	Re-training
16.0	Out-going inspection by FQC	Luminous intensity tester	Luminous intensity	/	N	ISO10526:1999E	1000	+/-200LUX	Incoming inspection procedure	/	1 time/Month	IQC	Reject / Adjust
		/	Visual	/	N	Visual	/	/	Out-going inspection chart	/	AQL 0.1 (SAMPLING PLAN C=0)	FQC	Return to production
		Analyzer	RF	/	N	Measurement	0	+/-30MHz	Out-going inspection chart	RF jig	AQL 0.1 (SAMPLING PLAN C=0)	FQC	Return to production
17.0	Packing	Reeling device	Cover tape peel off	/	N	Measurement	40	+/-20mgs	WI-SZHS-T206-S10-2& IP-SZHS-T206-P15	/	1time per reel	Operator	Reset
			Visual	/	N	Visual	/	/	IP-SZHS-T206-P15 and WI-SZHS-T206-P15	/	100%	Operator	Re-adjusted
			Bar code	/	N	Scanner	according to the WI		WI-SZHS-T206-S12	/	100%	Operator	Reject
			Temperature	/	N	Setting	NA		WI-SZHS-T206-S10-1-2& IP-SZHS-T206-P15	/	Check at the beginning of each packing	Operator	Re-adjusted
		Luminous intensity tester	Luminous intensity	/	N	ISO10526:1999E	1000	+/-200LUX	Incoming inspection procedure	/	1 time/Month	IQC	Reject / Adjust
18.0	Out-going inspection by FQC	/	Visual	/	N	Visual	/	/	Out-going inspection chart	/	3pcs/each reel	FQC	Return to production
			RF	/	N	Measurement	0	+/-30MHz	Out-going inspection chart	RF jig	3pcs/each reel	FQC	Return to production
			Packing quality	/	N	Visual	/	/	No any damage or peel off on tape, packing method as Out-going inspection chart	/	AQL=0.1 (SAMPLING PLAN C=0)	FQC	Return to production
19.0	Inspection before shipment	/	Visual	/	N	Visual	/	/	1. Check packing label on reel base on WI and stamp "PASS" on each label. 2. Check total quantity on each carton.	/	100%	operator	Return to production
20.0	Inspection by OQC (According to order)	/	Visual	/	N	Visual	/	/	Out-going inspection chart	/	100%	OQC	Return to production
History													
Version 版本	Effective Date 生效日期	Changing history 变更记录								Prepared by 编写		Approved by 批准	
1.0	2007-12-11	Add SPC control for pad size								Apple Zhu		Kelvin Poon	
2.0	2008-03-27	Add temperature control in packing station								Apple Zhu		Kelvin Poon	
3.0	2008-04-23	Update pad size sampling plan								Apple Zhu		Kelvin Poon	
4.0	2008-06-20	update S11,S12,S13 spec								Beck Huang		Kelvin Poon	
5.0	2008-10-27	update document								Beck Huang		Daqing	
6.0	2019-04-08	Add measurement length & Width & Height before sintering delete measurement the humidity of power								Merry Han		Emma Zhu	
7.0	2020-05-18	Changed the Screen tensility from 15N-35N to 20N-35N								Merry Han		Emma Zhu	
8.0	2020-06-18	changed the RF sampling frequency								Merry Han		Jack Ma	
9.0	2020-06-29	Update sampling plan for visual check for the Visual Burr											

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16. ROHS

Part Number	Supplier Vendor	WEIGHT (mg)	No	Raw material name (Homogeneous material) 原材料	Analysis Result (ppm=mg/kg), Class I Substances									
					Cd	Pb	Hg	Cr6+	PBBs	PBDEs	DBP	BBP	DEHP	DIBP
ANT1608LL1 4R2400A	Pulse (Suzhou) Wireless Products Co., Ltd	2.2	1	Ceramic substrate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			2	Marking ink	ND	13.7	ND	ND	ND	ND	ND	ND	ND	ND
			3	Conductive electrode	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			4	Termination electrode	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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