Approval Sheet

Part Name	BT Antenna	DESCRIPTION
Part No.	AFCR-100B	
Model	PPU-BN0100 (BT)	
Cresyn Code	CAF-0029-00000	
Revision	A	
Customer	CRESYN	
Supplier	PINCRAFT ENG.	

Mechanical Engineer	RF Engineer	RF Manager	Engineering Department Manager	Quality Manager
	내부 결재 완료			
JH.HEO	HJ.HA	KM.LEE	SW.BANG	SY.SIM
2015-02-04	2015-02-04	2015-02-04	2015-02-04	2015-02-04

Pincraft Engineering Inc.

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◈ CTF (Critical To Factor/Function)

■ VSWR Specification (방사 특성)

Item		Specification	Cpk	Remark
VSWR	2400MHz	4.4±0.5	1.39	14 PAGE
	2500MHz	7.8±0.5	1.36	14 PAGE

■ Cosmetic (외관)

Item	Specification	Cpk	Remark
CTF 1	16.17±0.15mm	1.38	17 page
CTF2	4.49±0.15mm	1.37	17 page
CTF3	3.2±0.15mm	1.34	17 page

* Sample inspect: Satisfy the benchmark of CPK. (Cpk: electrical part>1.67, machine part>1.33)
* dont satisfy the benchmark of CPK , need be to full inspect the product and confirm of engineering manage
* The CTF list need in inspect report of shipment for supplier

◈ Development Issue (개발단계 주요 ISSUE 사항)

ISSUE DATE	ISSUE	REMARK
2015.02.03	승인원 제작	

1.REVISION HISTORY

No.	Date	Before	After	Revision	Rev

2. Technology SPECIFICATIONS;

2.1 ELECTRICAL SPECIFICATIONS

Frequency(Phone)	2400MHz	2500MHz
SET V.S.W.R	***4.4±0.5***	***7.8±0.5***
3D Gain averge	***-8.9±0.5dB***	***-11.8±0.5dB***
Impedance	50Ω	

2.2 MECHANICAL SPECIFICATIONS

Antenna Drawing	38,43 page
Operating Temperature	-40℃ ~ +80℃
Weight	1.27 ± 0.1g
Lot-no Mark	38,43 page

2.3 PACKAGING

PINCRAFT ENGINEERING Inc.

Packing Spec.

Customer: CRESYN	Project: PPU BN0100 BT ANTENNA	Numbe: AFRC-100B	Issued:

	Number	Part name	Spec	Q'ty
Packing dimension	328	HIPS tray	22.5*17*0.4mm/case 289*219*13mm/tray	300/5700
		BOX	320*240*178mm	1/5700
		PAD	310*230*2mm	2/5700

product draw

Operation step

1. Prepare the packaging materials in the work place.
2. Packaging, one put 3 PCS, 300 PCS/tray, tray 180° staggered stacked, each group of 5,700PCS.
3. 1 set each, a total of 5,700 PCS. After full box, with transparent tape sealing.
4. The right place each tray need to paste the model label.
5. Request packaging before operation, be sure to carefully review each layer tray products, Prevent shipment shortage weight.

Tags

Company Name	Pincraft Engineering Inc.
Products Name	PPU BN0100 (BT)
Pincraft Code	AFCR-100B
Cresyn Code	CAF-0030-00000
Q'TY	5,700
Producing date	___year ___month ___date

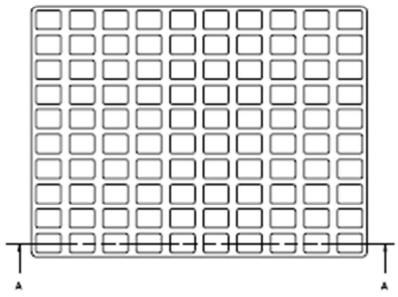
Attention: must be well protected against dampness, shock, press and handle with Care

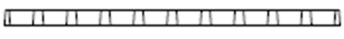
Points of Attention

1. Operator should wear gloves.
2. Note that the number of packing, not more loaded and less loaded. Mantissa box shall be marked (ie, upper left side of the carton labeled green 'mantissa' tags to distinguish.)
3. Cartons can not be stacked too high (three or less) toprevent stress deformation.

Drawing show

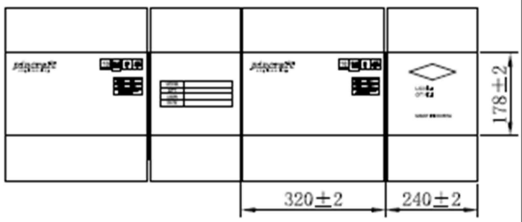
Pallet Size:





SECTION A—A

BOX size:



3. ELECTRICAL SPECIFICATIONS

3.1 FREQUENCY BAND

Blue Tooth

3.2 MATCHING REQUIREMENTS.

In order to assure the best performance of the antenna, the matching shall be evaluated in free space with the antenna vertically positioned. Pincraft shall give design support to the customer to obtain the optimum matching circuit for the antenna system.
The antenna shall comply with the Electrical Specification requirements, as set out below, while mounted on the customer supplied handset containing the PCB with the matching circuit. The handset with PCB is to be supplied by the customer and should be representative of the production parts. Any modifications in the handset or PCB can affect the performance of the antenna and should be discussed with Pincraft to determine the effect of such changes on antenna performance and delivery requirements.

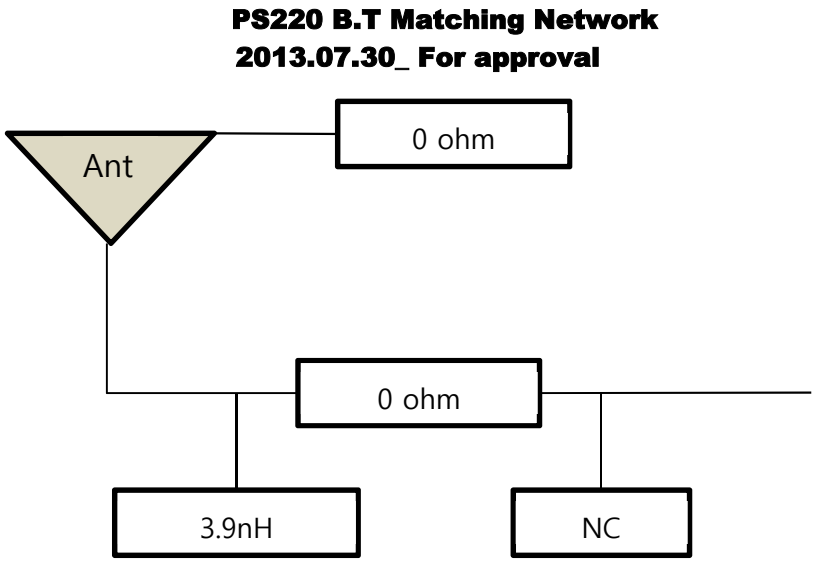


FIGURE 1. Matching Circuit

3.3 VSWR TEST SPEC ON PHONE SET

Frequency	2400MHz	2500MHz
SET V.S.W.R	4.4±0.5	7.8±0.5

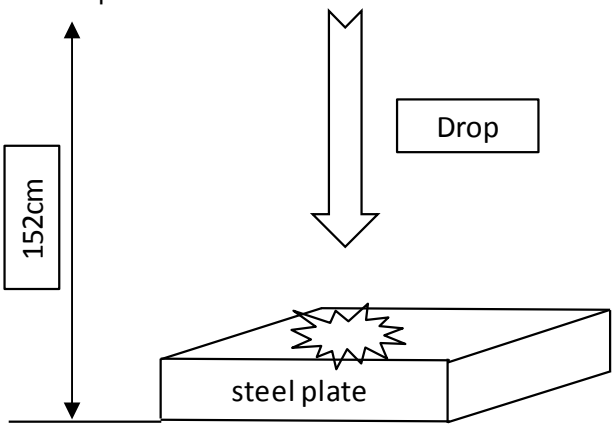
4. MECHANICAL SPECIFICATIONS

4.1 MECHANICAL CONFIGURATION

The appearance of the antenna is in accordance with drawing.

4.2 DROP TEST (낙하 시험)

The antenna attached to a dummy weighted radio or real Phone. It should withstand 12 drops from 152Cm heights onto a steel plate 500x 500mm with thickness of 20mm. Drop order is as follows;
Procedure: test from 152Cm,
2 Times for each Basic side (front, rear, left, right, top, bottom) – Total 12drops.
Temperature of the environment: +24°C±3°C.
After test is complete, there shall be no visual degradation in esthetical and mechanical performance. Electrical characteristics should be within the specified range.
The temperature of the environment should be +24ºC±3°C



4.3 X-CUTTING TEST (X-컷팅 시험)

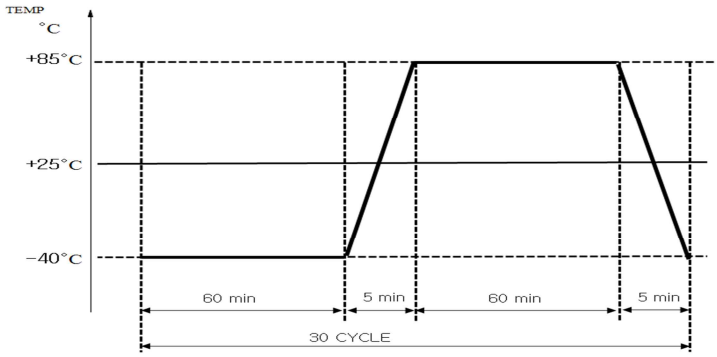
4.3.1. Place the antenna on the flat surface.
Cross cut plating area 2.0mmX2.0mm and then taping the platted surface with 3M #610 tape and rub the tape to adhere to plating area. And then take off the tape in the vertical direction.
After test is complete, there shall be no strip of coated material.
No square of the pattern shall be stripped more than 10% on the cutting area.
Electrical characteristics should be within the specified range.
The temperature of the environment should be +24ºC±3º C.

4.3.2. Place the antenna on the flat surface.
Cross cut spray coating area 1.0mmX1.0mm and then taping the coated surface with 3M #610 tape and rub the tape to adhere to plating area. And then take off the tape in the vertical direction.
After test is complete, there shall be no strip of coated material.
No square of the pattern shall be stripped more than 10% on the cutting area.
Electrical characteristics should be within the specified range.
The temperature of the environment should be +24ºC±3º C

5. ENVIRONMENTAL SPECIFICATIONS

5.1 THERMAL SHOCK TEST (열충격 시험)

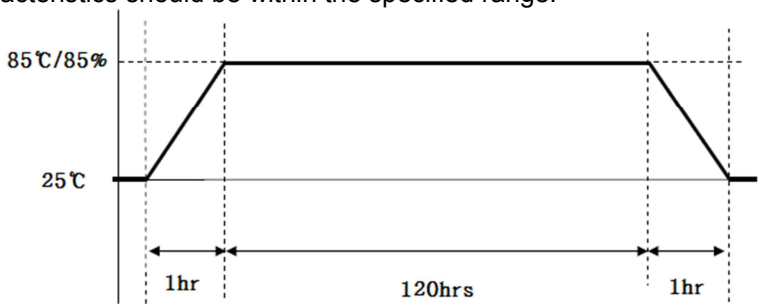
Place the antenna in an environmental chamber at temperature T1=-40°C. Expose antenna to this temperature during 60 minutes. Then expose antenna at temperature T2=+85°C during 60 minutes. Transfer time is 5 min.
Repeat this cycle 30 times.
After test complete, there shall be no visual deterioration or damage. Electrical characteristics should be within the specified range.



Thermal Shock Test

5.2 HIGH TEMPERATURE AND HIGH HUMIDITY TEST(고온고습 시험)

Place the complete in an environmental chamber at +25°C. Then increase temperature during 1 hour to +85° C with humidity increasing to 85% RH during 1 hours. Soak antenna with these parameters for 120 hours. After the finish initial ambient parameters should be achieved during 1 hour.
After test is complete, there shall be no visual degradation in esthetical and mechanical performance. Electrical characteristics should be within the specified range.



High Temperature and High Humidity Test

5.3 SALT SPRAY (CORROSION) TEST(염수분무시험)

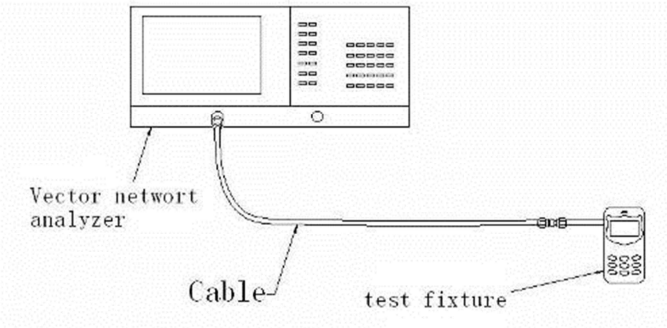
Place antennas in Salt Spray Cabinet at temperature +35°C with the salt fog of NaCl solution (5%); and then soak antennas for 48 hours.
After test is complete, there shall be no visual degradation in esthetical and mechanical performance. Electrical characteristics should be within the specified range.

6.TEST METHOD

6.1 Test Method of Production

In mass production it is not practical to use the handset supplied by customer. Pincraft will design a production test fixture for use on the processes that require electrical testing. The results of the test fixture will be correlated to the results obtained on the customer handset.

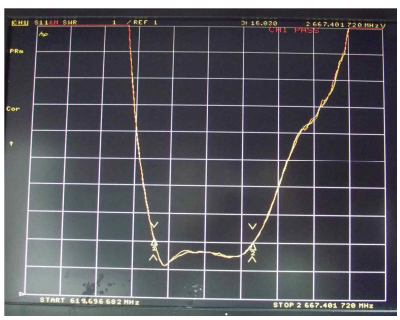
6.2 The following is our test fixture



6.2.1. We measure the VSWR of the golden sample as standard, and memory in the VNA
6.2.2 We set upper-limit and lower-limit according to the limits' sample.
6.2.3 We will fix the antenna-under-test very well.
6.2.4 We measure the VSWR of antenna-under-test, and compare the VSWR curve to the golden sample and limit's sample. It should be within the limit's samples curve
6.2.5 The out-of spec samples will be defected

6.3 The following is contrast VSWR

Lower-Limit Sample



Golden Sample

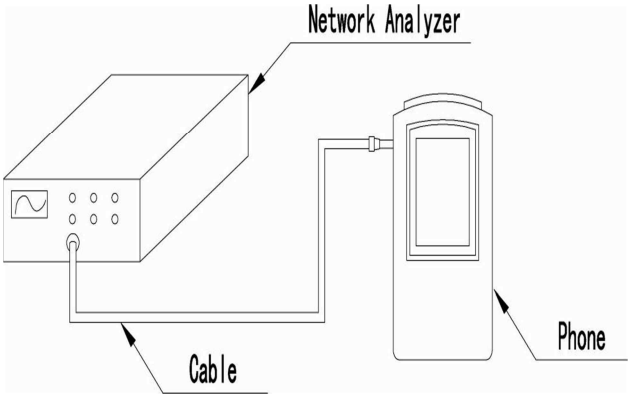
Upper-Limit Sample

6.4 Test Method of Engineering

The antenna is tested while mounted on the handset with the matching,circuit.The handset is positioned in (Free space means that the handset is held in a non-conductive device and away from any conductive)

6.4.1 Test Set-up

The antenna was evaluated using the customer provided prototype phone.
This section of the report describes the testing on this test fixture.

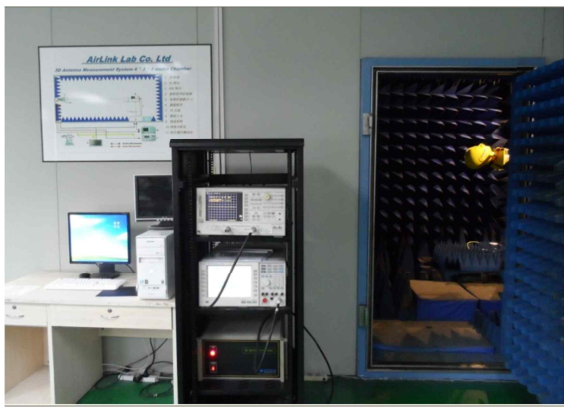


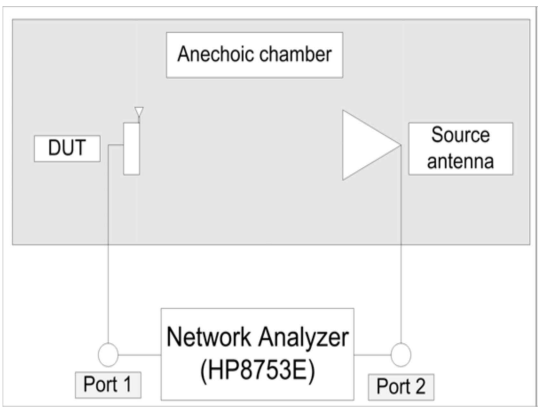
VSWR measurements (S11) were performed using HP8753E Network Analyzer and the previously described test fixture. A ferrite-loaded coaxial cable was used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

6.4.2 Gain & Radiation Patterns

Test system: AirLink 3D antenna measurement system

Test environment: temperature 25℃; humidity 48%.
The gain and efficiency of the antenna was measured in the OTA Chamber of Samsung Guangzhou Mobile Center

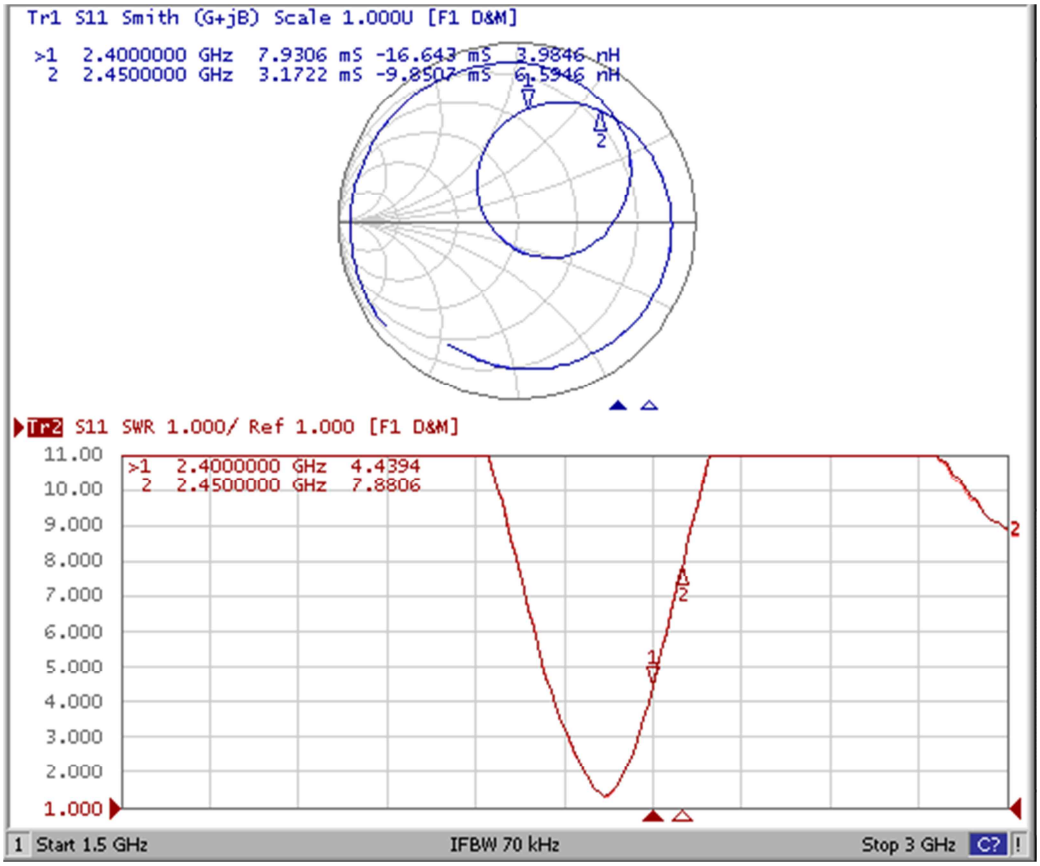




7.APPENDIX A

7.1ELECTRICAL MEASUREMENTS

7.1.1 VSWR GRAPH ON PHONE SET



7.1.2 VSWR DATA ON TEST FIXTURE

pincraft engineering

RF parameter CPK test Report					
Customer: CRESYN					
Part Name: PPU-BN0100BK01		Revision No.:		Insp.By:	
Part No.:		Date:2015-02-03		Eqt No.:	
Material:			Dim. NO:	Cavity No.:	/
Frequency(MHz)	2.4Ghz	2.5Ghz			
VSWR	4.40	7.80			
Upper tolerance :	0.50	0.50			
Lower tolerance :	0.50	0.50			
USL:	4.90	8.30			
LSL:	3.90	7.30			
Insp.Equi.	VNA				
MEAS. NUM	Fact Data	Fact Data			
1	4.45	7.82			
2	4.48	7.75			
3	4.31	7.82			
4	4.29	7.50			
5	4.27	7.49			
6	4.52	7.80			
7	3.98	7.92			
8	4.52	8.04			
9	4.40	7.52			
10	4.45	7.88			
11	4.52	7.89			
12	4.58	8.01			
13	4.62	8.10			
14	4.75	7.90			
15	4.61	7.88			
16	4.50	7.92			
17	4.40	7.93			
18	4.48	7.88			
19	4.45	7.82			
20	4.52	7.89			
21	4.41	7.87			
22	4.51	7.92			
23	4.32	7.85			
24	4.43	7.80			
25	4.45	7.67			
26	4.48	7.62			
27	4.52	7.89			
28	4.62	7.88			
29	4.45	7.80			
30	4.43	7.78			
31	4.42	7.79			
32	4.41	7.82			
33	4.40	7.81			
34	4.39	7.75			
35	4.38	7.84			
36	4.40	7.88			
37	4.37	7.83			
38	4.33	7.79			
39	4.38	7.78			
40	4.35	7.77			
41	4.28	7.80			
42	4.40	7.84			
43	4.41	7.86			
44	4.43	7.88			
45	4.43	7.84			
46	4.45	7.90			
47	4.39	7.92			
48	4.41	7.80			
49	4.40	7.85			
50	4.39	7.84			
MAX	4.75	8.10			
MIN	3.98	7.49			
MEAN	4.43	7.83			
STDEV	0.11	0.12			
CP	1.48	1.45			
CPK1	1.39	1.36			
cpk2	1.57	1.53			
cpk	1.39	1.36			
Checked by:		Prepared by:			

7.2 Gain Data

7.2.1 3D Gain Data

Antenna Pattern & Gain Report

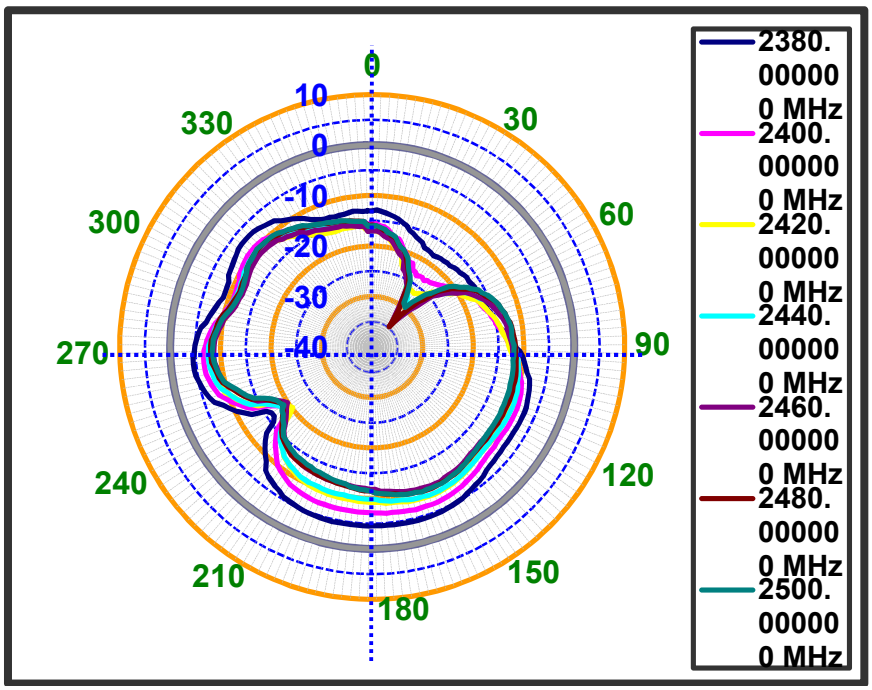
Manufacturer	Company Name
Model Name	Filename
Tester Name	Airlink
Test Date	2015-02-03 오전 11:32:22
IF BW	100 Hz
Port Power	0.00 dBm
Meas Step	15 `

Photo

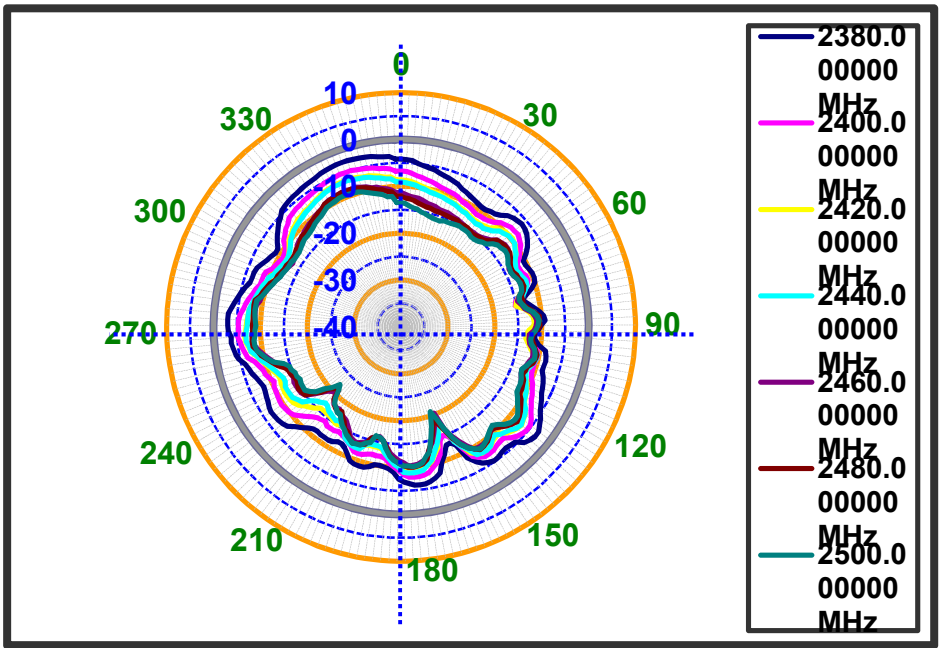
Frequency	Efficiency	Average Gain			Max Gain			Max Position	Directivity
		Ver	Hor	Total	Ver	Hor	Total		
2380.000000 MHz	21.3 %	-8.9 dBi	-10.8 dBi	-6.7 dBi	-0.8 dBi	-3.7 dBi	-0.3 dBi	Theta60/Pie315	6.45 dB
2400.000000 MHz	12.8 %	-11.0 dBi	-13.2 dBi	-8.9 dBi	-2.8 dBi	-5.6 dBi	-2.7 dBi	Theta60/Pie300	6.24 dB
2420.000000 MHz	9.2 %	-12.4 dBi	-14.7 dBi	-10.4 dBi	-4.5 dBi	-6.8 dBi	-4.4 dBi	Theta60/Pie300	5.96 dB
2440.000000 MHz	9.2 %	-12.3 dBi	-14.7 dBi	-10.4 dBi	-4.6 dBi	-6.6 dBi	-4.1 dBi	Theta60/Pie315	6.25 dB
2460.000000 MHz	6.5 %	-13.8 dBi	-16.2 dBi	-11.8 dBi	-6.4 dBi	-7.9 dBi	-6.1 dBi	Theta60/Pie315	5.80 dB
2480.000000 MHz	7.1 %	-13.5 dBi	-15.8 dBi	-11.5 dBi	-6.2 dBi	-7.3 dBi	-6.0 dBi	Theta60/Pie315	5.56 dB
2500.000000 MHz	6.6 %	-14.0 dBi	-15.9 dBi	-11.8 dBi	-7.0 dBi	-7.3 dBi	-6.2 dBi	Theta150/Pie345	5.64 dB

7.2.2 2D Gain Data

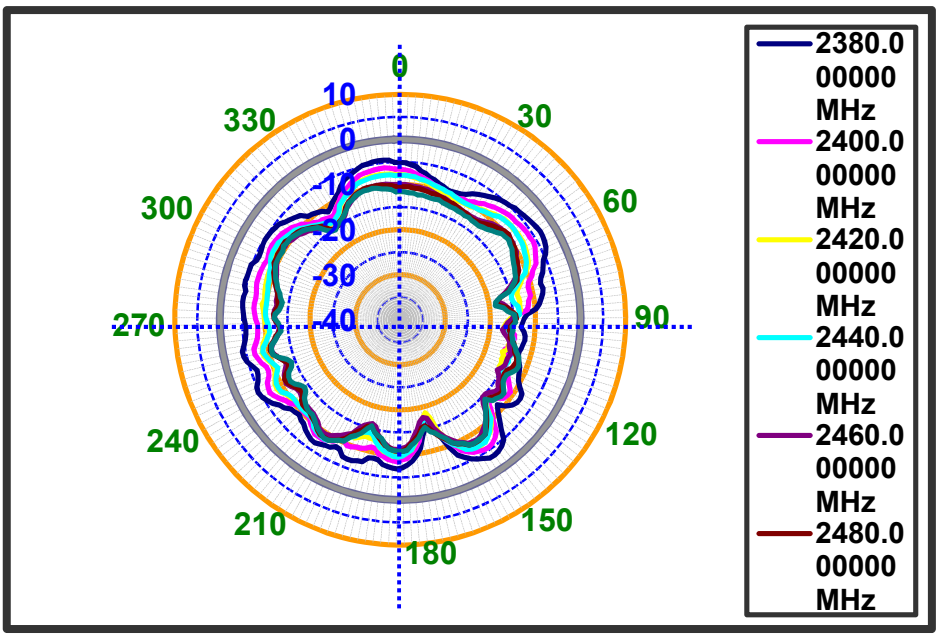
(a) Azimuth plane (H-plane)



(b) Elevation plane (E1)



(c) Elevation plane (E2)



7.3 Antenna Dimension (CPK Report)

Pincraft Engineering.

CPK test Report					
Customer: Cresyn					
Part Name:	PPU-BN0100	Revision No.:		Insp.By: JH HEO	
Part No.:	AFCR-110B	Date:2015-01-30		Eqt No.:	-
Material:	-		Dim. NO:	Cavity No.:	-
No.	1	2	3		
Dimension	16.17	4.79	3.20		
Upper tolerance :	0.15	0.15	0.15		
Lower tolerance :	0.15	0.15	0.15		
USL:	16.32	4.94	3.35		
LSL:	16.02	4.64	3.05		
Insp.Equl.	2.5D	2.5D	2.5D		
MEAS. NUM	Fact Data	Fact Data	Fact Data		
1	16.13	4.83	3.12		
2	16.15	4.85	3.19		
3	16.10	4.87	3.21		
4	16.18	4.81	3.20		
5	16.21	4.86	3.23		
6	16.15	4.85	3.17		
7	16.13	4.85	3.12		
8	16.13	4.85	3.18		
9	16.15	4.87	3.19		
10	16.10	4.81	3.21		
11	16.18	4.85	3.20		
12	16.21	4.87	3.23		
13	16.15	4.81	3.17		
14	16.13	4.86	3.24		
15	16.10	4.87	3.18		
16	16.18	4.81	3.19		
17	16.21	4.85	3.21		
18	16.15	4.87	3.20		
19	16.13	4.84	3.23		
20	16.21	4.81	3.17		
21	16.15	4.86	3.12		
22	16.13	4.87	3.18		
23	16.15	4.81	3.19		
24	16.14	4.87	3.21		
25	16.18	4.81	3.20		
26	16.21	4.85	3.23		
27	16.15	4.87	3.17		
28	16.13	4.81	3.24		
29	16.21	4.86	3.18		
30	16.15	4.87	3.19		
31	16.13	4.81	3.21		
32	16.15	4.85	3.20		
33	16.14	4.87	3.23		
34	16.18	4.81	3.17		
35	16.15	4.85	3.12		
36	16.13	4.87	3.18		
37	16.21	4.81	3.19		
38	16.15	4.86	3.21		
39	16.13	4.84	3.20		
40	16.15	4.85	3.23		
41	16.21	4.81	3.17		
42	16.15	4.86	3.12		
43	16.13	4.84	3.18		
44	16.21	4.85	3.19		
45	16.15	4.87	3.21		
46	16.11	4.81	3.20		
47	16.15	4.86	3.12		
48	16.21	4.84	3.17		
49	16.15	4.85	3.24		
50	16.13	4.81	3.12		
MAX	16.21	4.87	3.24		
MIN	16.10	4.81	3.12		
MEAN	16.16	4.84	3.19		
STDEV	0.03	0.02	0.03		
CP	1.52	2.14	1.45		
CPK1	1.67	1.37	1.57		
cpk2	1.38	2.91	1.34		
cpk	1.38	1.37	1.34		

7.4 Reliability testing Report

pincraft engineering

신뢰성 시험 성적서
(Reliability Test Report)

결재	작 성	검 토	승 인

MODEL	PPU-BN0100	작 성 일 자	2015.02.02	의뢰	일 자	2015.01.22
PART NAME	BT Antenna	검사 항목	신뢰성 테스트		의뢰자	허재호 연구원
CUSTOMER	PINCRAFT	TEST SIZE	35 PCS	검사	일 자	2015.01.23
TYPE		검사 용도	개발검증용		검사자	심소율 대리

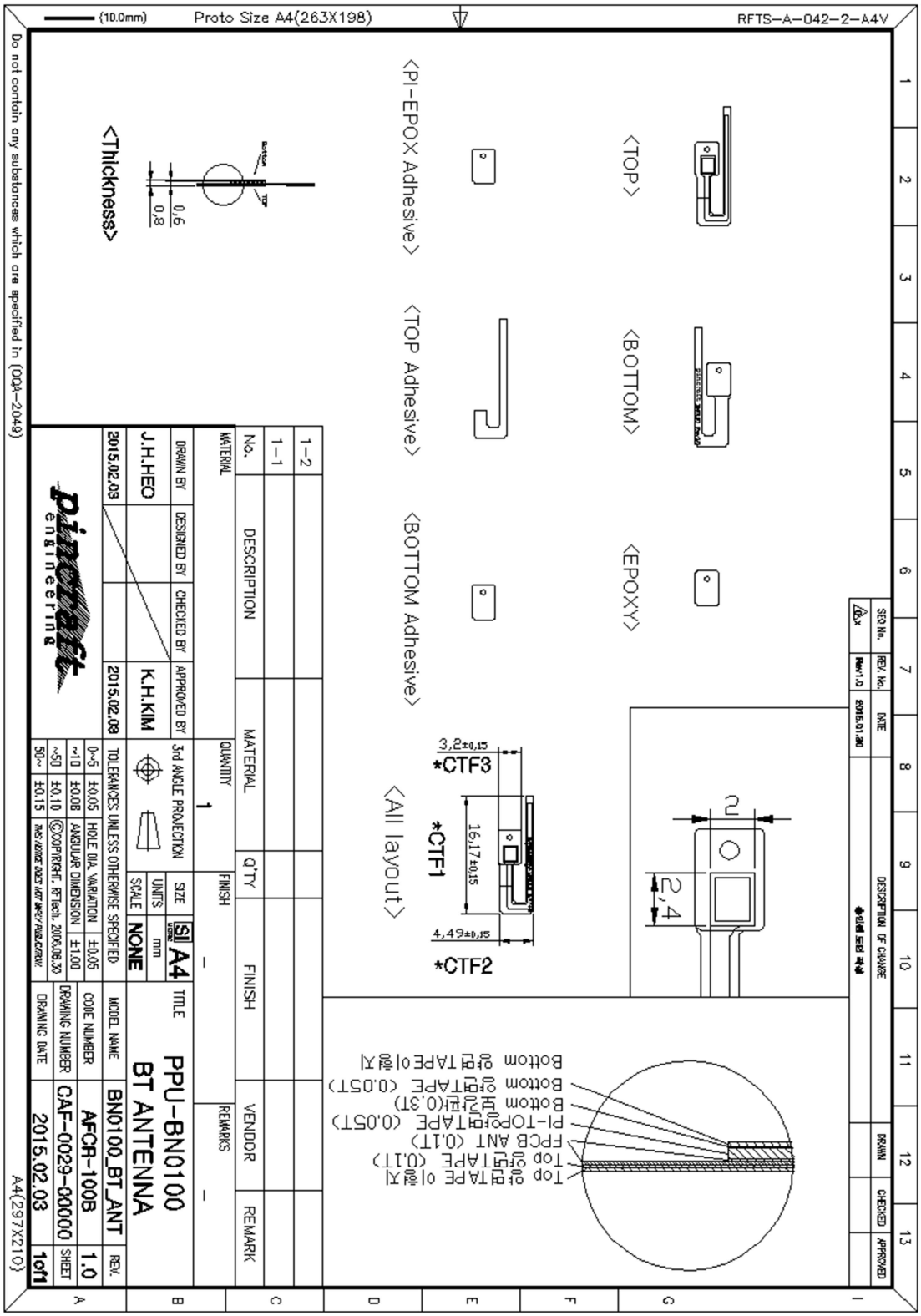
* Test 항목 및 결과

NO	시험 항목	SPEC	TEST 시료					판정	비고
1	열충격	-40℃ 1hr ~ 85℃ 1hr 조건(1 CYCLE) 으로 챔버에 10 CYCLE방치 상온 4hr 방치 시험 후 ANTENNA는 전기적, 기구적 요구 사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		
2	고온방치	85℃ 조건으로 120시간 방치 시험 후 ANTENNA는 전기적, 기구적 요구 사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		
3	저온방치	-40℃ 조건으로 120시간 방치 시험 후 ANTENNA는 전기적, 기구적 요구 사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		
4	고온,고습 시험	안테나를 항온 항습 챔버를 이용하여 온도 85℃에서 습도 95%의 환경에 120시간 방치 후 상온에서 1시간 방치한다. 시험 후 ANTENNA는 전기적, 기구적 요구 사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		
5	염수 분무 시험	안테나를 염수 분무 시험기를 이용하여 온도 +35℃, 염수 농도 5% 상태로 72시간 분사 실시한다. 시험 후 ANTENNA는 전기적, 기구적 요구사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		
6	낙하 시험	안테나를 1.50m 높이에서 콘크리트 바닥에 19회, 안테나를 1.20m 높이에서 콘크리트 바닥에 12회, 낙하 시킨다. 시험 후 전기적, 기구적 요구사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		
7	X-CUTTING	시험은 1mm 간격 비독판 Tape 접착 3회 시험 후 ANTENNA는 전기적, 기구적 요구 사항을 만족해야 한다.	#1	#2	#3	#4	#5	PASS	
			OK	OK	OK	OK	OK		

종합 판정
PASS

Pincraft Engineering

7.5 Antenna Drawing



7.6 Part List

PART NAME	MATERIAL 원료명 (사양)		Material 원료업체	COLOR 색상	Finish 후가공	FACTORY 가공 업체	QTY	Remark 비고
FPCB	COPPER CLAD LAMINATE	COPPER 0.035mm	MCH11-15NE (INNOX)	Yellow		World Top	1	
		PLYIMIDE 0.025mm						
	COVERLAY FILM	PI 0.0125mm	MAH-0X-15NX (INNOX)	Yellow				
		ADHESIVE 0.015mm						
	STIFFENER (보강판)	EPOXY T0.3	DS-7402 (DOOSAN)	Yellow				
		접착제 TAPE 0.035mm	D3410 (SONY)					
	MARKING INK	IR INK(WHITE)	SCM-500W HF2 (SEOUL CHE)					
	TAPE	ADHESIVE 0.05mm	3M966 (3M)	Yellow		3M		
		이형지 0.1mm						
		ADHESIVE 0.1mm	KGK300A			KGK		
		이형지 0.1mm						

8. Manufacturing Process

NO	공 정	사용설비	관리 항목	관리 기준	검사방법 및 기기	비고
1	재 단	ROLL CUTTING M/C	재질, 두께	POLYMIDE 2Layer 1mil 1/2oz ED	MICRO METER	
2	DRY FILM LAMINATING	DRY FILM LAMINATING	기포,주름,이물질 없을것 온도 : 110±10℃ 속도 : 1.5 ~ 2.0 m/min	Roller 압력,온도,속도	육 안 Lupe (X10)	DRY FILM 찌꺼기 잔류 주의
3	노 광	노광기	SPEC ± 20% 노광량 : 30~40 진공압 : 65~76 CMHG	Roller 압력,온도,속도	육 안 Lupe (X10)	
4	현 상	현상기	SPEC ± 20% 현상 속도 : 2.5 ~ 3.3m/min 현상 온도 : 30 ± 3℃	미현상, 과현상		
	부 식	부식기	SPEC ± 20% 부식 온도 : 50 ± 3℃ 부식 속도 : 2.0 ~ 2.5m/min	미부식, 과부식		
5	E/R 박리	박리기	ETCHING RESIST	산화,이물질 없을것 온도 : 45 ±5℃ 속도 : 2.5 ~ 3.3m/min	알칼리 농도	정기적으로
			동박 내 잔류 유.무		육안검사	액교체
6	A.O.I 검사	A.O.I 검사기	OPEN,SHORT,VOID 검사	비수치 : 70TH cad data 비교 수치 : 92%	A.O.I 검사기 검사기준서	
7	C/V 가공 (앞면)	ROLL CUTTING M/C	재 질 , 두께, 재단규격	1/2mil POLYIMIDE (재단사이즈)±2mm	MICRO METER 줄자	
		POWER PRESS	금형연마상태, LAND 누락	BURR : 0.1mm 이하	이물질,찍힘주의	
8	C/V 가접 (앞면)	수작업 + 가접용다리미	COVERLAY 치우침	POLYMIDE 1/2mil 지시선±0.2 ㎜이하	육안검사	이물질 주의
9	HOT PRESS	HOT PRESS 기	온도 : 140 ~ 175℃ 시간 : 3,000 ~ 4,200 초	들뜸,치우침 OVER FLOW RESIN, 구김 및 밀림	육안,LUPE	
10	AUTO PUNCH	AUTO MACHINE	HOLE 누락 HOLE 동심도	AIR 압력 : 4 ~ 6kg	전수검사	
11	P.S.R 인쇄	반자동 인쇄기	INK 밀착성/경화조건	SILK SCREEN:120# SPI-707 LF (SEOUL CHE..)	육안검사	
12	P.S.R 경화	BOX OVEN 기	INK 들뜸이 없을것	73℃± 2 1 차 경화 : 14 ± 2 분	BOX OVEN 기	

NO	공 정	사용설비	관리 항목	관리 기준	검사방법 및 기기	비고
13	P.S.R 노광	노광기	진공, 노광량	노광량:300~700 진공압:60 ~ 80 CMHG SPEC ±20%	FILM 대조 육안 SCALE LUPE	
14	P.S.R 현상	P.S.R 전용현상기	미현상, 과현상	SPEC ±20% 현상온도 : 30 ± 3℃ 현상 ph : 12 ± 1	육안, SCALE LUPE	
15	완전 경화	BOX OVEN 기	INK 들뜸이 없을것	155℃±5℃/55 분±5 분	(3M CELLOPHANE) TAPING TEST	
16	표 면 처 리	AUNI 도금기	밀착력, 표면상태 도금 두께	Au : MIN 0.03 ㎛~ / Ni : 3~7 ㎛	육안검사 TAPING TEST 신뢰성 TEST (납땜성)	외주
17	보강판 부착 (뒷면)	수 작 업	TAPE 재질,폭 치우침 , 밀착성	DS7402 + D3410 TAPE 합지	육안검사	
18	TAPE 부착 (뒷면)	수 작 업	치우침,밀착성,이물	TAPE 재질,폭 (3M966)	육안검사	
19	1 차 외형 가공	POWER PRESS 기	금형 연마 상태 손잡이 가공	BURR : 0.1 ㎜이하, 헛타발, 역타발 주의 연마주기:30,000 타 도면	육안검사	눌림, 찍힘 주의
20	이형지 부착 (뒷면)	수 작 업	치우침,밀착성, 접착제 뭉침,이물	TAPE 재질,폭 (3M966)	육안검사	
21	2 차 외형 가공	POWER PRESS 기	금형 연마 상태 HOLE 가공	BURR 0.1mm 이하일것. 헛타발, 역타발 주의	육안검사	눌림, 찍힘 주의
22	3 차 외형 가공	POWER PRESS 기	금형 연마 상태 외형 가공	BURR 0.1mm 이하일것. 헛타발, 역타발 주의	육안검사	눌림, 찍힘 주의
23	최 종 검 사		OPEN,SHORT JIG 검사, VOID,돌기,이물질검사, 커넥터부 중점 검사 DOT MARKING 표시	검사 기준서	육안검사 / LUPE	눌림, 찍힘 주의
24	출하검사		치수측정	N=10, C=0	비접촉 3 차원측정장비 Micro Meter 치수 측정용 도면	샘플링 검사 매 출하시 (출하검사기준서 에 준할 것)
			외관검사	미성형 및 BURR 없을것. 찍힘 및 눌림 없을것. AQL G-II, 0.25	육 안 확대경 (X10) Lupe (X10) 외관검사기준서	
			도금 두께	n=10 ,c=0	도금두께측정기 (XRF-2000L)	
25	최종포장		수 량 CHECK 제품 혼입 여부 바코드 / 현품표	SHEET 포장 혼입 없을 것 누락 및 오부착 없을 것	전자 저울 육안	전수

9. Analysis RoHS

Part List Info			weight	standards weight(g)		Self Test analysis								
				Actual weight(g)										
				Error rate(±5%)	–									
SEC CODE	Ass'y Part Name	Material Select	Material Name	Substance Select	Analysis Data Sheet		XRF No.	EDX-100A			Maker	ISP		Test Data	2014-02-04
					Date	Analysis Data No.	Cl	Pb	Hg	Cr	Br	Cl	Sb	Spot	Judgment And Exemption
							0:50 1:70	0:200 1:700	700	700	0:900	0:900	700	Change	
BN0100 BT ANT	Copper foil	Existing material	FCCL	Organic	2014-08-28	RT14R-S4166-002-E1	N.D	N.D	N.D	N.D	N.D	N.D	N.D		PASS
	adhesive tape	Existing material	3M966	Organic	2014-06-10	RT14R-U1165	N.D	N.D	N.D	N.D	N.D	N.D	-		PASS
	EPOXY	Existing material	DS-7402	Organic	2014-03-11	RT14R-S1249-004-E1	N.D	N.D	N.D	N.D	-	-	-		PASS
					2014-03-11	RT14R-S1249-004-E3	-	-	-	-	N.D	433	-		PASS
	adhesive tape	Existing material	D3410	Organic	2014-04-17	CE/2014/41969	N.D	N.D	N.D	N.D	N.D	640	-		PASS
	AUNI	Existing material	AU	Inorganic	2014-06-20	AYAA14-29679	N.D	N.D	N.D	N.D	N.D	N.D	N.D		PASS
			NI		2014-07-24	RT14R-S3826-009-K	N.D	N.D	N.D	N.D	N.D	N.D	N.D		PASS
	Coverlay	Existing material	Coverlay	Organic	2014-03-10	RT14R-S1313-001-E	-	-	-	-	N.D	202	-		PASS
					2014-03-04	RT14R-S0822-003-E1-R	N.D	N.D	N.D	N.D	-	-	N.D		PASS
	adhesive tape	Existing material	KGK300A	Organic	2014-04-25	KA/2014/41377	N.D	N.D	N.D	N.D	N.D	N.D	-		PASS
	INK	Existing material	INK	Organic	2015-01-20	AYAA15-02164	N.D	N.D	N.D	N.D	N.D	473	N.D		PASS

※ Material
※ If you ha
※ Distingui

the results

품품질

10. OQC REPORT

P C E	입안	심사	결정	검 사 성 적 서	C R E	입안	심사	결정
		/						

업체회사명	핀크래프트엔지니어링	부 품 명	BT ANTENNA	LOT SIZE	EA
적 용 모 델	PPU-BN0100	관리NO/부품번호	CAF-0029-00000	LOT NO	

검 사 일	PCE	2015.01.27	검 사 원	PCE	심소불	합 불 판 정	PCE	합 계	재 질
	CRE			CRE			CRE		POLIMIDE

검사항목	검사방식		검사 조건	시 료 수		불 량 수		유해물질 측정결과							
	PCE	CRE		PCE	CRE	PCE	CRE	유해물질	Cd	Pb	Hg	Cr	Br	Cl	Sb
외 관	G1,0.1		C=0	5		0		측정장비	XRF (EDX-LE)						
도 금	G1,0.1		C=0	5		0		SPEC	50	200	700	700	900	900	700
치 수	CHECK		C=0	5		0		측정값	ok	ok	ok	ok	ok	ok	ok
환경유해물질	1		C=0	1		0									

측정DATA ※ 검사항목별 검사수준에 일치된 수량을 검사하고 시료가 20개 이상일경우 측정 DATA는20개만 작성한다.

검사항목	1.외관	2. 도금두께	3. 도금두께	4. 치수측정(전장)	5. 치수측정(전폭)			
측정기	육시검사	도금두께 측정기	도금두께 측정기	3차원 측정기	3차원 측정기			
Serial No	/	140209	140209	VX311UC01118	VX311UC01118			
고 정 일 자	/	2014.06.07	2014.06.07	2014.03.05	2014.03.05			
승인원 규격	한도견본에준함	Ni=2~7μm	Au=0.03~1μm	16.17±0.15	4.79±0.15			

구 분	PCE	CRE	PCE	CRE	PCE	CRE	PCE	CRE	PCE	CRE
1	OK		OK		OK		OK		OK	
2	OK		OK		OK		OK		OK	
3	OK		OK		OK		OK		OK	
4	OK		OK		OK		OK		OK	
5	OK		OK		OK		OK		OK	
6										
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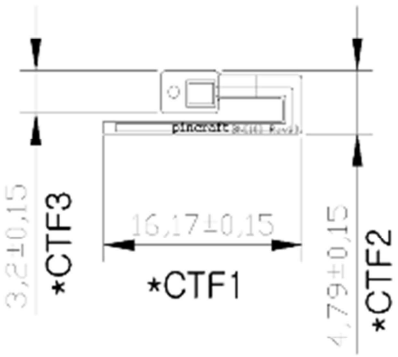

PRESS 업체		사출 업체		조립 업체		조립일자	
도금 업체		도금 NO.	Ni도금		건조온도/시간		출고LOT
			Au도금		배합비		출고시간
사출 업체		사출기명					
		사출기 톤수					
승인 자수							