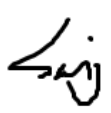
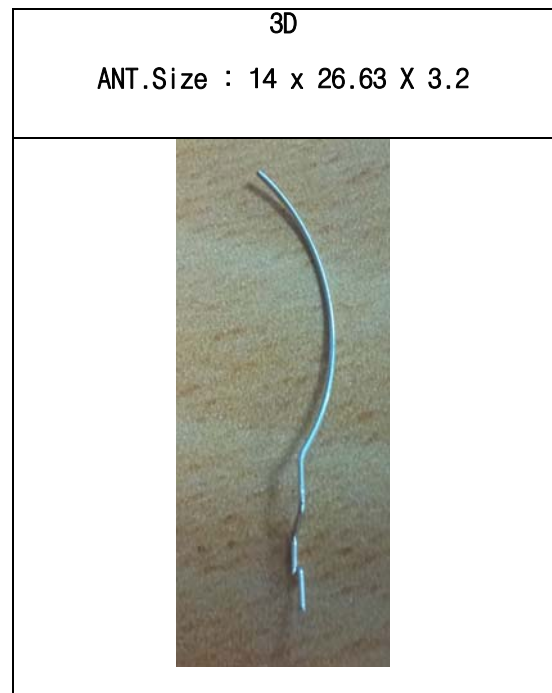




ANTENNA SPECIFICATIONS

SIGN	Drafting	Check		Approval
				
	JY.SHIM	MJ.Song	BH.JO	SH.LEE
	12/07/17	12/07/17	12/07/17	12/07/17



CUSTOMER	BLUECOM
MODEL NAME	RCB-100
PART NAME	B.T ANTENNA
BLUECOM CODE	-
ARRO CODE	IBS-0462

205-11, Anyang7-Dong, Manan-Gu, Anyang, Gyeonggi-Do, KOREA
 TEL : 031)448-8172 / FAX : 031)448-4194

Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	1/12

– LIST –

1. Application LIST
2. Technical Properties
 - 2.1 Electrical Properties
 - 2.2 Mechanical Properties
3. TEST CONDITION
 - 3.1 Examination Environmental Condition
 - 3.2 Test equipment
4. Electrical requirements
 - 4.1 VSWR (voltage standing wave ratio)
 - 4.3 Radiation pattern
 - 4.3 Antenna gain
5. Structural requirement pacts
 - 5.1 Plating thickness test
6. Environmental requirement
 - 6.1 Temperature Cycling
 - 6.2 Temperature Impact Test
7. Other Documents
 - 7.1 Packing Conditions
 - 7.2 Mechanical Specifications
 - 7.3 Electrical requirements data
 - 7.3.1 VSWR & Smith chart
 - 7.3.2 Radiation pattern & Antenna gain
 - 7.4 Manufacture Process chart
 - 7.5 Plating Specification by component
 - 7.6 Model Partlist

Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	2/12

1. Approval LIST

Approval LIST					
NO	DATE	Before a change	After a change	Reason	REV
1	12.07.17		New Revision		1.0
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

※ ※ A change of REV can be changed about mass producing antennas after the approval.

Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	3/12

2. Technical Properties

2.1 Electrical Properties

FREQUENCY BW	2,400 ~ 2,483 MHz
Min VSWR	Less then 4.0 :1
Max gain(dBi)	-0.1(3D test)
Input IMPEDANCE	50Ω
POLARIZATION	VERTICAL
RADIATION PATTERN	OMNI-DIRECTIONAL

2.2 Mechanical Properties

CONNECTOR TYPE	N/A
SIZE	Reference Drawings(7.2 Reference)
Operating temperature	-20 °C ~ +70 °C
Weight	0.04g

Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	4/12

3. TEST CONDITION

3.1 Examination Environmental Condition

The antenna is placed at temperature $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and humidity 25%~80%(Under 55% RH) for executing all testes (Electrical, Mechanical and Environmental Test).

3.2 TEST Equipments

We need equipments for the antenna measurement

Equipments	Purpose	Remarks
Network analyzer	Measurement for VSWR & IMPEDANCE	
Standard(Horn)antenna	BT Frequency spec	
Anechoic Chamber	Measurement for antenna gain	cable, connector
Projector and Vernier calipers	Measurement For Dimension	
Measurement tester for Plating thickness	Measurement for Plating thickness	

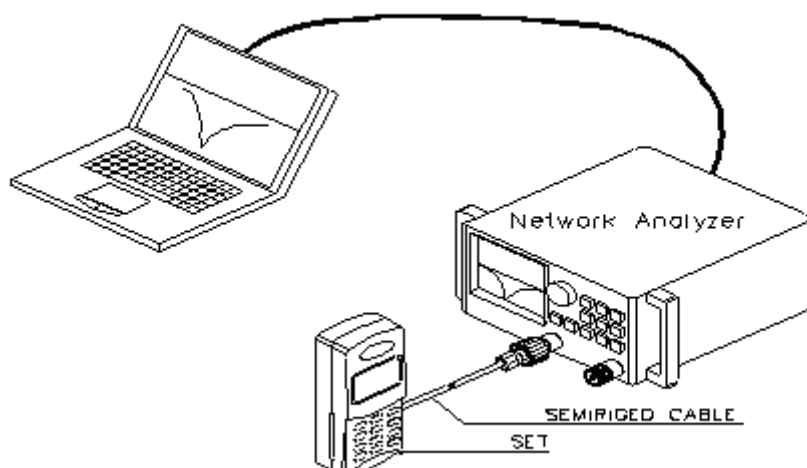
Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	5/12

4. ELECTRICAL PROPERTIES

4.1 V S W R

Antenna must be satisfied with electrical specifications by indicated VSWR requirements.

FREQUENCY BW	2,400 ~ 2,483 MHz
MIN VSWR	4.0 :1



4.2 Radiation Pattern

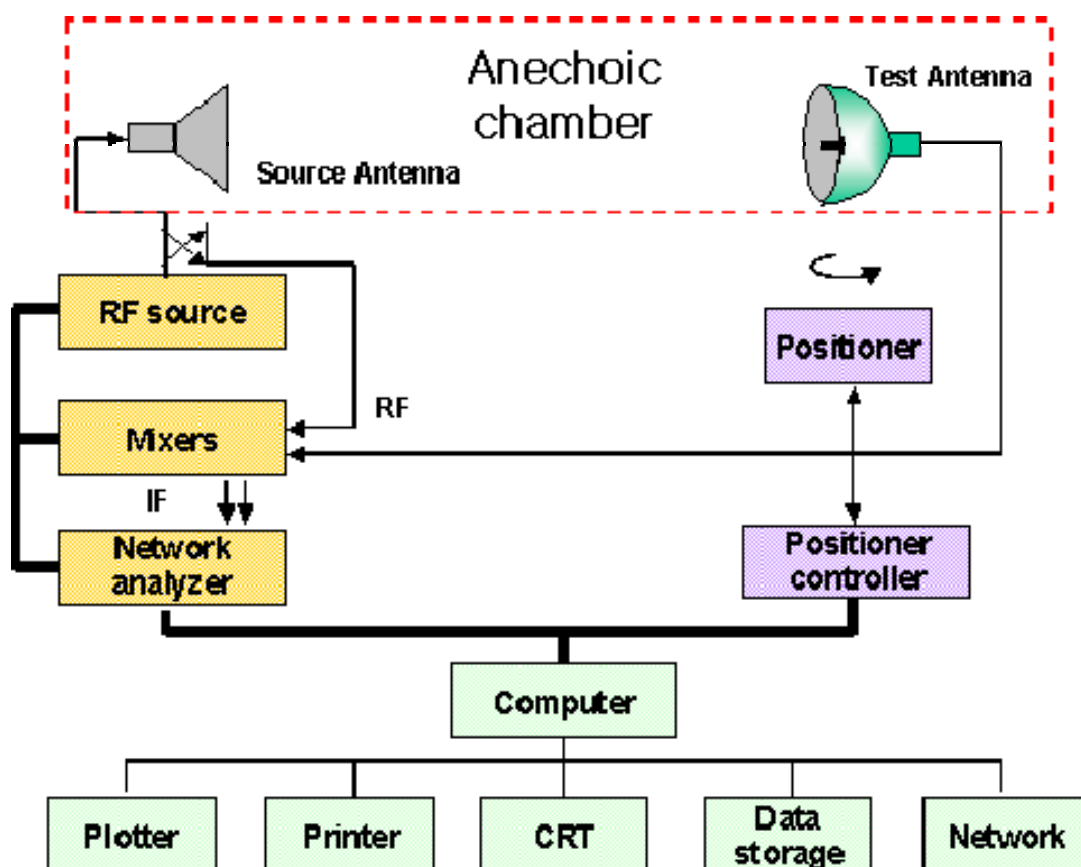
- o| This radiation of antenna pattern must have Omni-directional Patterns

Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	6/12

4.3 Antenna gain

Measurement Method : As shown in fig , setting the horn antenna as standard antenna, measure the gain by [dBi].

FREQUENCY BW	2,400 ~ 2,483 MHz
MAX gain(dBi)	-0.1 (3D test)



Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	7/12

5. Structural requirement pacts

5.1 Plating thickness test

Shall meet the specified plating thickness.

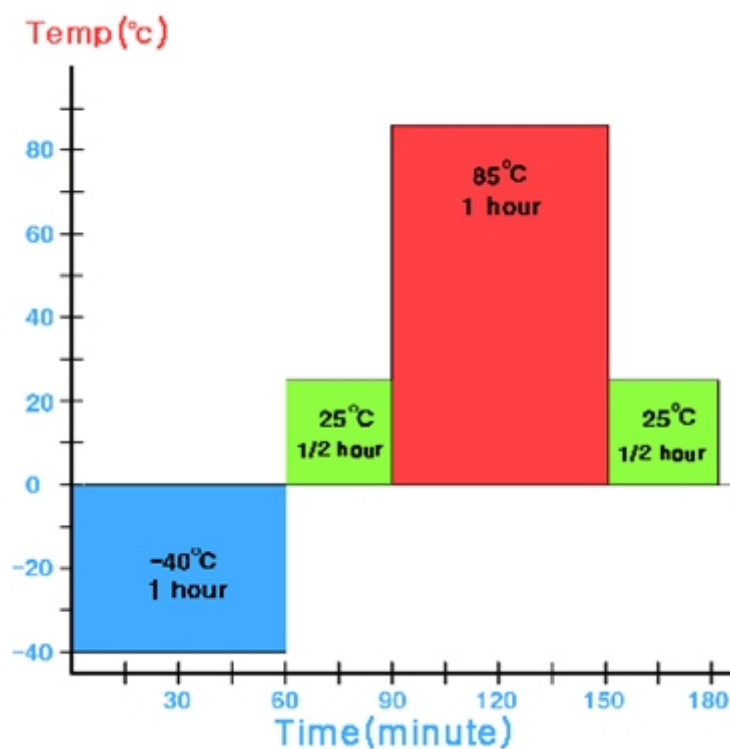
Ni	1 ~ 3 um
----	----------

6. . Environmental requirement

6.1 Temperature Cycling

- The antenna is placed in a climate chamber. The temperature is cycled as follows:
- The temperature is kept constant at -40C for 1 hour, kept constant at +25C for 1/2 hour, kept constant at +85C for 1 hour, kept at +25C for 1/2 hour.

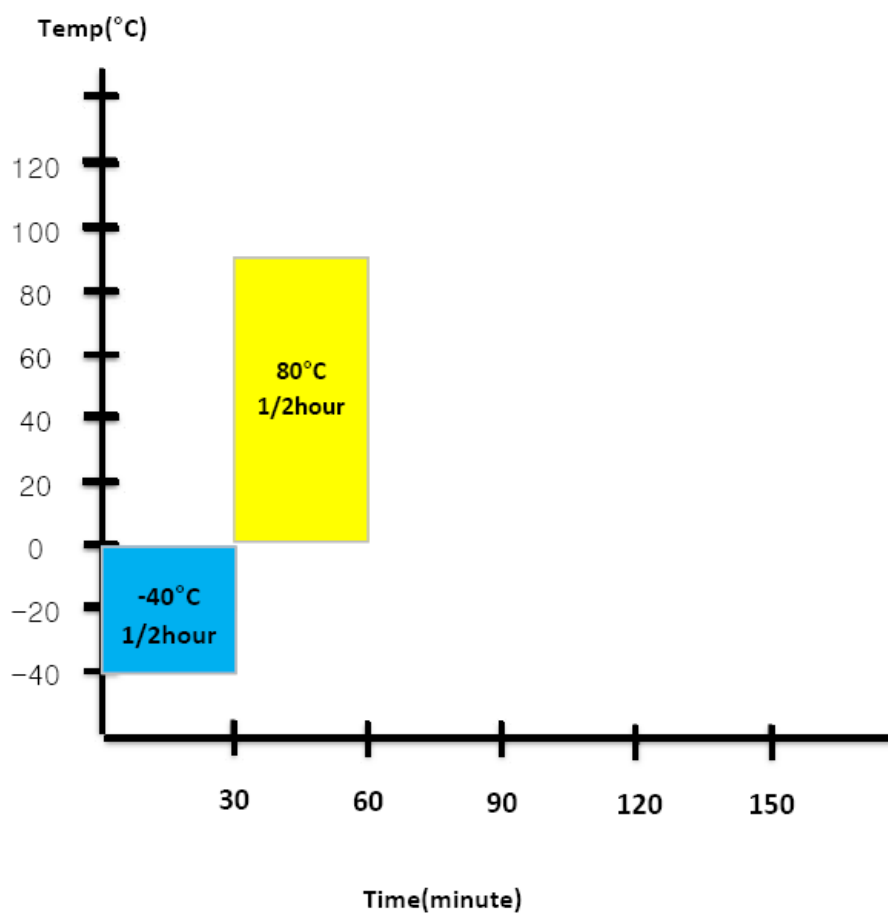
This procedure is repeated 5 times. The procedures are executed based on KSC-0222.



Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	8/12

6.2 Temperature Impact Test

- The antenna is placed in a climate chamber. The temperature is cycled as follows:
- The temperature is kept constant at -40°C for 1/2 hour, kept constant at $+85^{\circ}\text{C}$ for 1/2 hour. 4 hour leaving.
- This procedure is repeated 30 times . The procedures are executed based on KSC-0222.
- It not must be above in appearance and function.



Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	9/12

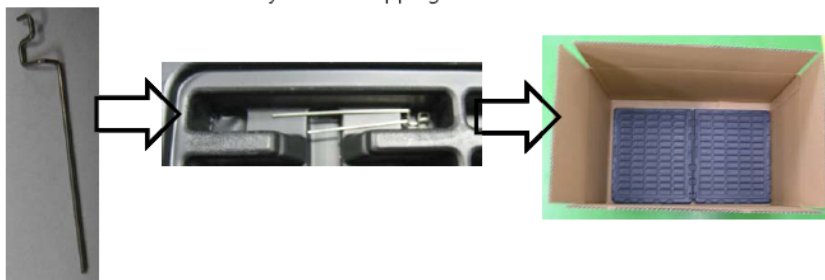
7. Other Documents

7.1 Packing Conditions

1.Put the hard paper in bottom of prepared carton box



2.Pack the manufactures finished test by 5ea per each box.
put socket in the hole when you are wrapping it.



3.after checking the number of complete products and tray, pack them.

tray 1cavity	5 ea
1 tray	120 cavity
1 tray	600 ea
1carton	60 tray
1carton	36000 ea



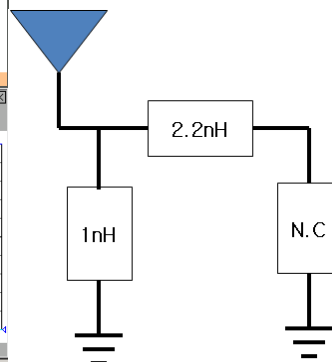
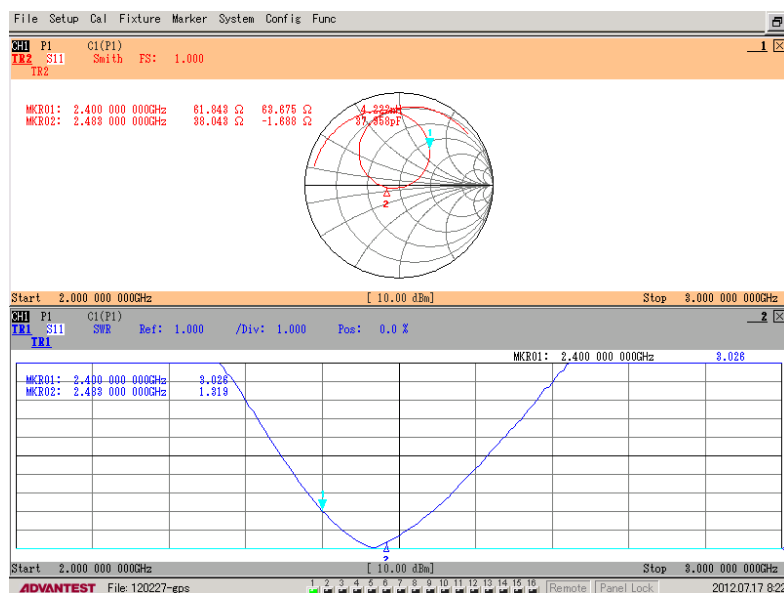
4. after packaging, attach manufacturing specification table and regulated lable-"HF" lable



Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	11/12

7.3 Electrical characteristic data

7.3.1 VSWR & SMITH chart



7.3.2 Passive gain

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400.000000 MHz	35.5 %	-11.1 dBi	-5.6 dBi	-4.5 dBi	-4.0 dBi	-1.7 dBi	-1.2 dBi
2421.000000 MHz	46.1 %	-10.0 dBi	-4.4 dBi	-3.4 dBi	-3.6 dBi	-0.7 dBi	-0.1 dBi
2442.000000 MHz	43.3 %	-10.5 dBi	-4.6 dBi	-3.6 dBi	-4.7 dBi	-0.9 dBi	-0.8 dBi
2463.000000 MHz	48.3 %	-10.0 dBi	-4.2 dBi	-3.2 dBi	-4.2 dBi	-0.6 dBi	-0.4 dBi
2484.000000 MHz	54.0 %	-9.4 dBi	-3.7 dBi	-2.7 dBi	-3.8 dBi	-0.3 dBi	-0.1 dBi

Antenna Specifications		DATE	2012. 07. 17	REV.	1.0
MODEL	RCB-100	TYPE	WIRE ANTENNA	PAGE	12/12

7.4 Manufacture Process chart

DATE		Rev.No	Page No	Q C Process Chart						Management No	Department in charge	Draft	Review	Approval				
2012.07.17		0	1/1							QC-120717	Q.C	L.J.S		C.B.H				
MODEL		RCB-100																
Material/part	FLOW CHART			Process Name	Applicable Standards	Factor Management				Property Management				Defect	Managed By			
Material/part	Material/part	Production Process	Q.C			Facility Tool	Item	Management Frequency	Recording Method	Inspection Method	Measuring Tool	Inspection Frequency	Recording Method					
STEEL WIRE				Import inspection	Inspection	VNA RF test JIG	* CTQ(Pattern) (plating thickness) Ni : 1 ~ 3μm	Everyday	job sheet	appearance Dim's	Visual V/C	毎LOT SPL'	Inspection log book	appearance Dim's	Inspector			
				Sub-AssY	Work instruction paper					appearance	Visual	Every Lot	Job sheet	appearance	Worker			
				Process Inspection * CTQ (VSWR)	Inspection standard paper					VNA	VNA CAL	Every Lot	Inspection log book	RF	Inspector 1人			
				Process Inspection LOT	Inspection standard paper					Lot marker set	Everyday	job sheet	appearance	Visual	Every Lot	Job sheet	appearance	Inspector 1人
				Shipment inspection	Inspection standard paper					전공정 정감질, 실내화 활용	appearance Dim's RF	Visual V/C VNA	SPL'	출하검사 성적서	appearance RF	Inspector 1人		
packaging	Work instruction paper	TOTAL	4人															

*. Factory : Anyang Factory(ARRO.co.Ltd)

7.5 Plating Specification by component

Model name	Name	material	Plating	Remarks
RCB-100	STEEL WIRE	STEEL WIRE	NI : 1~3um	All Ni Plating

7.6 PART_LIST

RCB-100 PART LIST

NO	Part name	Spec	Maker	Code	Remarks
1	STEEL WIRE	STEEL WIRE	Shinhwa	IBS-0462	Ni Plating