

## BLE ANTENNA SPECIFICATION FOR APPROVAL

CUSTOMER:

CUSTOMER PARTNO:

SUPPLIER:

PRODUCT MODEL: HCBG01

PRODUCT NAME: BT 2.4G Antenna

PRODUCT CODE: M01-0601130R0A

CUSTOMER SIGNATURE:

CUSTOMER SEAL:

SUPPLIER SIGNATURE:

SUPPLIER SEAL:

NOTE: PLEASE RETURN THIS COPY AS A CERTIFICATION OF YOUR APPROVAL

Prepared by: 董春玲	Date: 2022.11.22	Add:	Room 405, Building R3-A, South District, Nanshan Science and Technology Park, Shenzhen
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## VERSION INFORMATION

## PERFORMANCE PARAMETER

### **1. Electrical Characteristics**

1	Frequency Range	2400MHz~2500MHz
2	V.S.W.R	$\leq 2.0$
3	Minimum Efficiency	75. 02%
4	Maximum Gain	4.66dBi
5	Impendence	50Ω
6	Polarization	Linear polarization

### **2. Mechanical parameters**

1	Measure	FPC:41.5*10.0mm/ Cable: 71.0mm*Φ1.13mm
2	Colour	Black

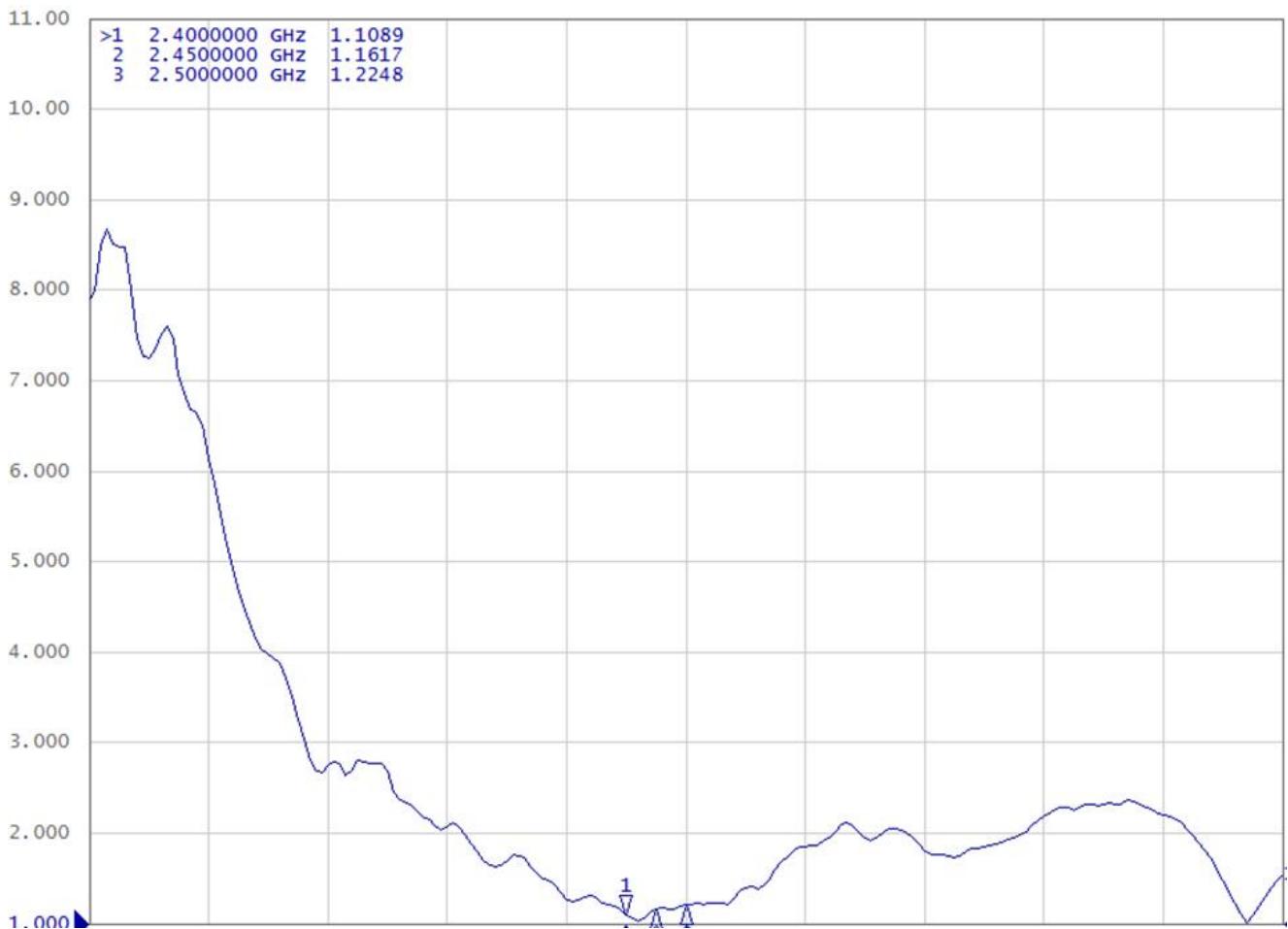
### **3. Environment Condition**

1	Working Temp	-30°C~80°C
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## TESTING CURVE

### 1. Performance test

#### 1.1 V.S.W.R



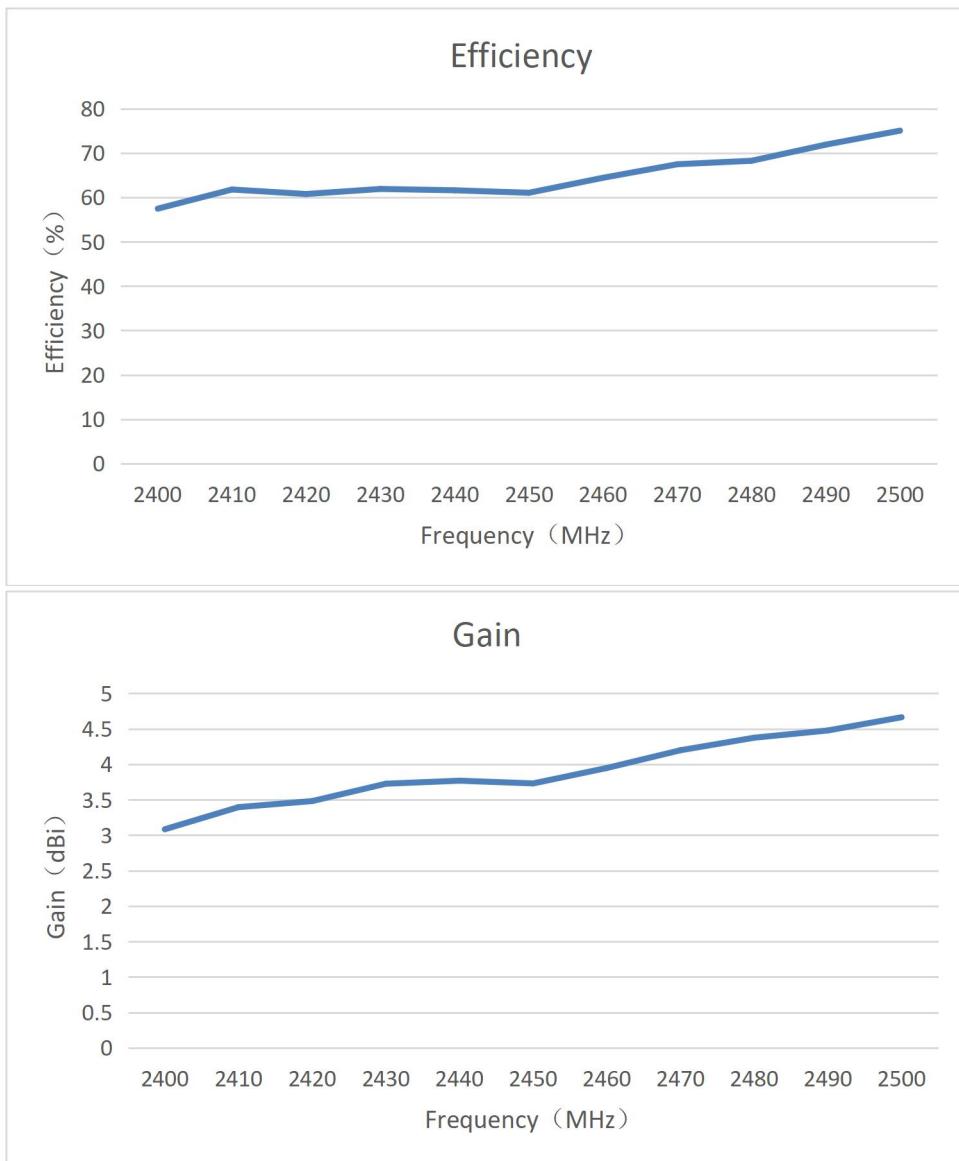
#### Data list

Freq	2.4	2.45	2.5
VSWR	1.10	1.61	1.22

## TESTING CURVE

### 2. Passive testing

#### 2.1 Efficiency and Gain



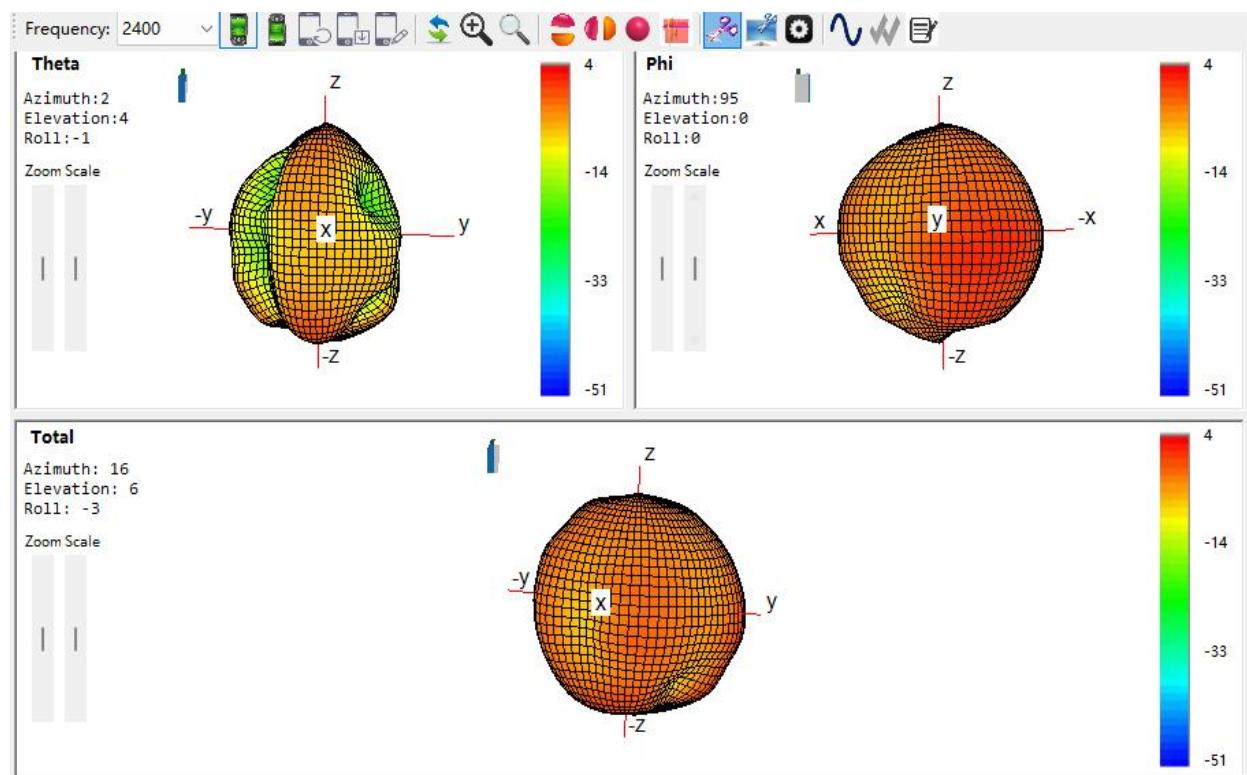
#### Data list

Freq(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Gain (dBi)	3.08	3.39	3.48	3.73	3.77	3.73	3.95	4.20	4.37	4.48	4.66
Efficiency(%)	57.45	61.76	60.75	61.88	61.58	61.02	64.40	67.45	68.24	71.87	75.02

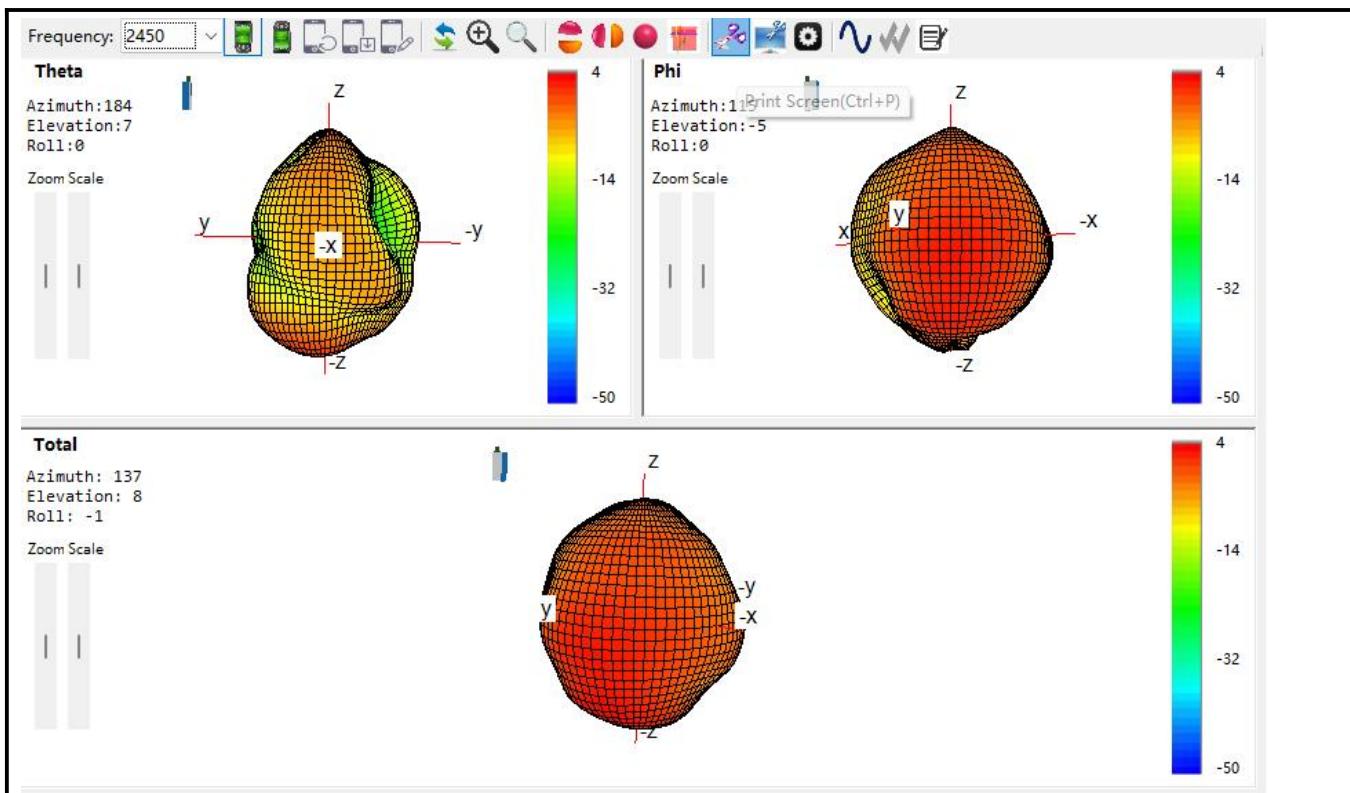
## TESTING CURVE

### 2.2 3D Map

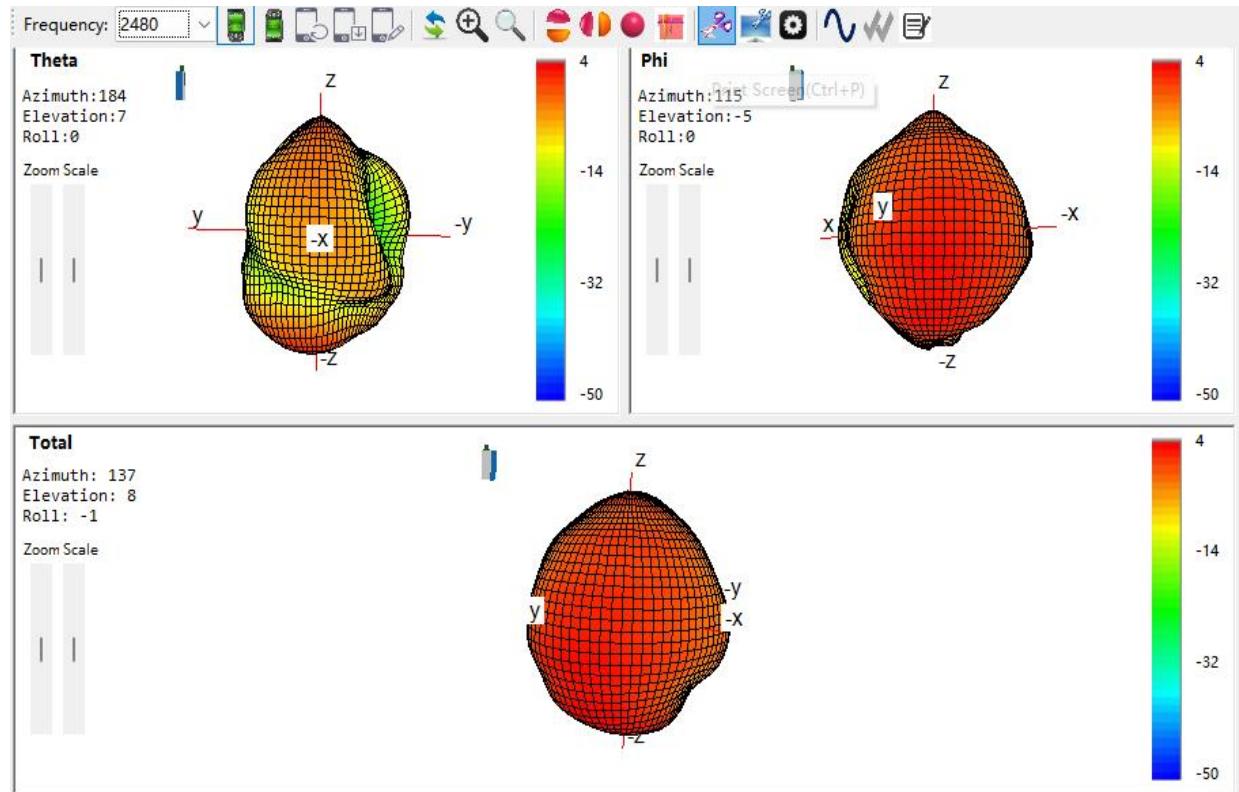
2400MHz Gain=3.08dBi



2450MHz Gain=3.73dBi

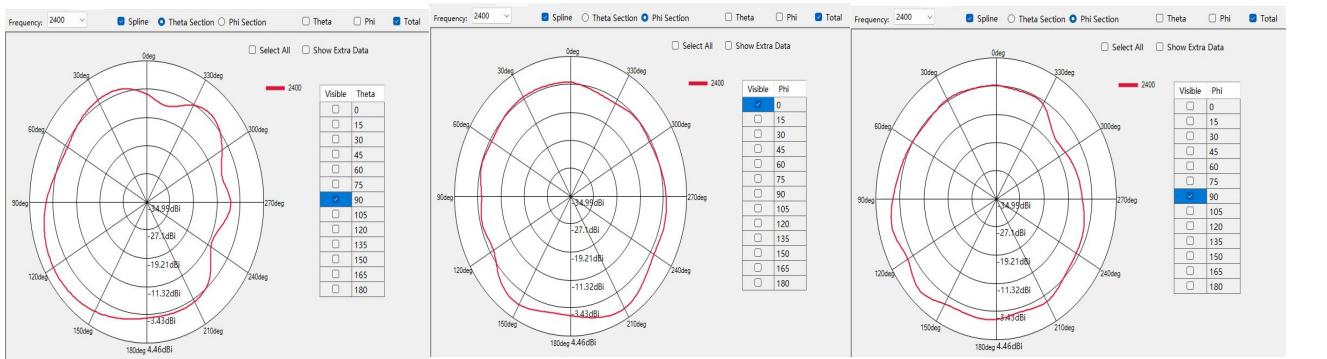


2480MHz Gain=4.37dBi

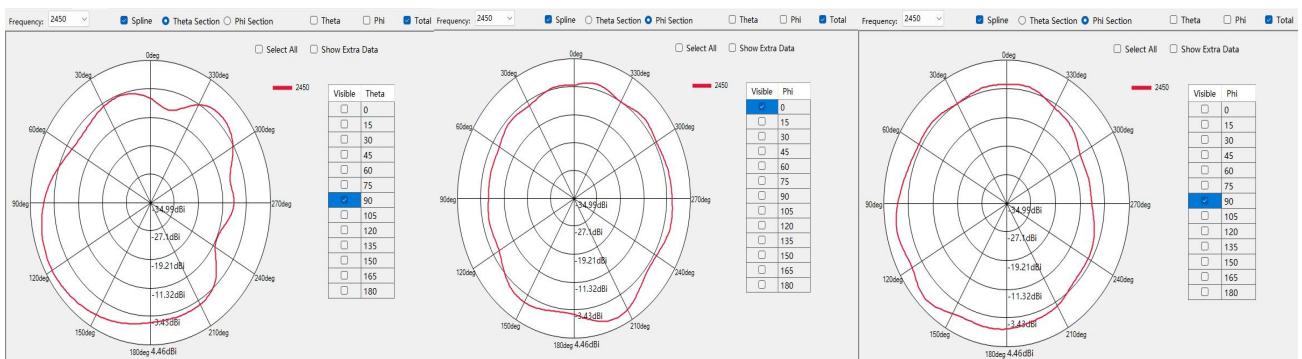


## 2.3 2D Figure

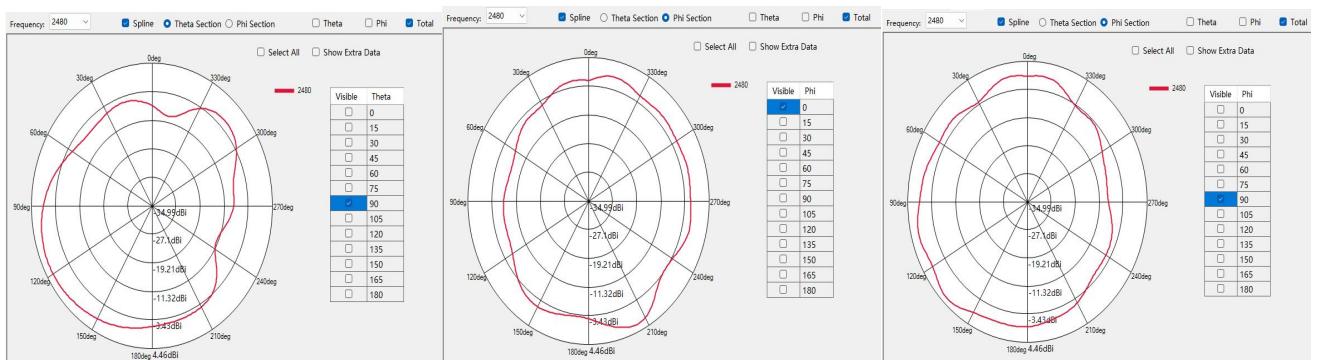
2400MHz Gain=3.08dBi



**2450MHz Gain=3.73dBi**



**2480MHz Gain=4.37dBi**

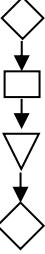


## SCHEDULE DRAWING

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
<b>Rev</b>	<b>Description</b>			<b>Date</b>	<b>Remark</b>
<b>A</b>	New drawing			20221122	
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<b>8</b>	<b>7</b> </td				

Project Name		HCBG01		Antenna Type	BLE Antenna	检验日期	2022-11-22		
Appearance inspection standards			1、 There is no abnormality on the antenna surface.						
Dimensional inspection standards			2、 Within the tolerance range required by the drawing						
No.	Testing Items	Spec.	Testing Tools	Sample Qty	Result	Remark			
1	Appearance	As above standard	Eyes	4	OK				
2	Size	As shown in the following table	Vernier Caliper	4	OK				
3	Performance Test	VSWR	≤2.0						
No.	Testing items	Spec.	Testing Tools	Test results (including 6 data records of the highest and lowest values)					
				1	2	3	4	5	6
1	Appearance/Size	41.5±0.3	Caliper	41.6	41.5	41.5	41.55	41.47	
2		10.0±0.2		10.12	10.0	10.0	10.09	10.2	
3		71.0±2.0		71.56	171.0	71.9	71.0	71.0	
4									
5									
Remark									
Approval: 杨永成			Confirm:陈建尤			Testing: 董春玲			

# QC ENGINEERING DRAWING

QC ENGINEERING DRAWING			File No.	MA-QCW-2211-035		File Name	HCBG01 BLE Antenna			prepared by	赵艳			
			Version	A				HCBG01 BLE Antenna		Confirm				
			Release date	2022.11.22			Effective date	2022.11.22		page number	1/1			
No.	Process	Process name	Process parameters/quality characteristics		Tools	Inspection Machine	Inspection Method	Checking frequency	Usage Record		Manager			
1		Incoming inspection	Inspection standards/drawings		Caliper	/	Eyes	AQLRandom inspection	IQCInspection Report		IQC			
2		Welding coaxial line	Assembly drawings		soldering iron	/	/	/	/		Operator			
2		Packaging (bagging) quantity confirmation	/		/	/	Eyes	100% inspection	Production daily report		Operator			
3		Warehouse	Production order		/	/	/	/	Product Inventory Order		Warehouse keeper			
4		Pre-shipment inspection	/		/	/	/	Random inspection	Sampling report		OQC			
Explanation:  Indicates operation and processing;  Indicates confirmation, inspection, judgment, and approval;  Indicates storage;  Indicates transportation;														
记号		Modifications					Version	Date		editor	confirm			
		Original Issue					A	2022.11.22		赵艳	徐茂元			

## ROHS TEST REPORT

Project Name	Code	Report test sample name	Testing facility	Testing time	Test report number	Testing Result	Remark
HCBG01 BLE ANTENNA	M01-0601130ROA	FPC (Substrate)	SGS	2022/2/21	SHAEC2202460503	OK	
		FPC (Ink)	SGS	2022/8/5	ETR22705905	OK	
		FPC (Adhesive)	SGS	2022/1/12	CANEC2200386501	OK	
		Coaxial cable (tinned copper)	SGS	2022/7/29	CANEC2215893206	OK	
		Coaxial cable (FEP)	SGS	2022/1/15	TAOEC2107741702	OK	
Fiction: 董春玲		Confirm: 陈建尤		Date: 2022.11.22		Seal:	

## PRODUCT VERIFICATION

Testing items	Test description/test standard	Target Requirements	Product Verification (PV)							Remark
			Sample		Test Location			Testing	Responsible	
			Qty	Type	Customer	Supplier	Third Party	Result		
Appearance Checking	The surface should not have defects such as dents, scratches, cracks, deformations, burrs, mildew spots, etc.; the surface coating should not bubble, crack, or fall off; metal parts should not have rust or other mechanical damage; the injection material should not overflow.	Appearance is Normal	100% inspection	Tooling parts		√		OK		
Size	According to drawing size	Within the size tolerance	3pcs	Tooling parts		√		OK		
Performance Checking	The product meets the requirements of the design specification	Short circuit and continuity test	100% inspection	Tooling parts		√		OK		
Insertion and extraction force	First generation terminal plugging and unplugging force	Pull-out test, the bearing capacity is less than 0.8KG	3pcs	Tooling parts						

Salt spray resistant	48 hours salt spray test	The surface is not rusted after cycle verification	3pcs	/							
Requirements for banned and restricted substances	Tested according to RoHs requirements	Products should comply with RoHs standards	/	/			✓	OK			
Packaging rules	Place according to the drawing specifications	Visual inspection and placement as required	100% inspection	Tooling parts		✓		OK			

## BOM DETAILS

No.	Code	item	Version	Spec.	Color	Unit	Qty
1	F01-01020030R0A	FPC	V1.0	Black/FPC one-and-a-half material/front adhesive 3M9471/gold-plated 1U/41.5*10.0mm/RoHs	Black	PCS	1
2	X01-0205650R0A	Coaxial Cable	V1.0	Black/coaxial cable/stripped wire on one end (2.0/3.2/1.2)/first generation Zepu terminal on one end/1.13*71.0mm/RoHs	Black	PCS	1
3							
4							
5							