

# SPECIFICATION FOR APPROVAL

客 户

CUSTOMER: Launch Tech Co., Ltd.

客 户 料 号

CUSTOMER PART NO.: \_\_\_\_\_

供 应 商

SUPPLIER : Tongxun Technology

供应商标号

SUPPLIER PART NO. \_\_\_\_\_

产 品 名 称

PRODUCT NAME: DBSCar VII Built-in Bluetooth antenna

日 期

DATE: 2023-05.-11

<b>Customer Signature :</b>	<b>Customer Seal:</b>
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<b>Supplier Signature:</b>	<b>Supplier Seal :</b>
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NOTE: Please return this copy as a certification of your approval!

# IA.0320.LA.0FE Bluetooth Antenna Specification

## 1. Application:

This application shall apply for antenna unit which shall be used such as automotive, conventional communications, smart home, etc..

## 2. Electrical Specification:

*Those specifications were specially defined for customer's model, and all characteristics were measured under the model's handset testing jig.*

### 2-1. Frequency Band:

Frequency Band	MHz
Bluetooth	2400-2500

### 2-2. Impedance

50 ohm nominal


### 2-3. VSWR

#### 2-3-1. Measurement frequency points and VSWR value

Frequency Band(MHz)	2400	2450	2500
2-3-3. Typical Value:	1.46	1.37	1.34

#### 2-3-2. VSWR

Frequency Band(MHz)	2400	2450	2500
Typical Value:	≤2	≤2	≤2

UNLESS OTHER SPECIFIED TOLERANCES ON: X=±                    X.X=±                    X.XX=± ANGLES=±                    HOLEDIA=±		 KINGRF TECHNOLOGY CO., LTD.
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TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification		SPEC REV. P0

<p>2-3-3 Measuring Method</p>	<ol style="list-style-type: none"> <li>1. A 50 Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR.</li> <li>2. Keeping this jig away from metal at least 20 cm</li> </ol>																		
<p>2-3-4 Picture</p>	<table border="1" style="font-size: small; margin-top: 10px;"> <thead> <tr> <th>Peak</th> <th>Frequency (GHz)</th> <th>SWR</th> </tr> </thead> <tbody> <tr><td>1</td><td>2.400000</td><td>1.4520</td></tr> <tr><td>2</td><td>2.450000</td><td>1.3827</td></tr> <tr><td>3</td><td>2.500000</td><td>1.3514</td></tr> <tr><td>4</td><td>5.150000</td><td>5.0110</td></tr> <tr><td>5</td><td>5.850000</td><td>4.4817</td></tr> </tbody> </table>	Peak	Frequency (GHz)	SWR	1	2.400000	1.4520	2	2.450000	1.3827	3	2.500000	1.3514	4	5.150000	5.0110	5	5.850000	4.4817
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<p>UNLESS OTHER SPECIFIED TOLERANCES ON:  <math>X = \pm</math>                      <math>X.X = \pm</math>                      <math>X.XX = \pm</math>                  ANGLES = <math>\pm</math>                      HOLEDIA = <math>\pm</math></p>			<p><b>KINGRF TECHNOLOGY CO., LTD.</b></p>
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### 2-4-1 Efficiency and Gain

Passive Test For TEST-2.4			
Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
2400	47.57	-3.22	0.88
2410	52.88	-2.78	1.28
2420	52.64	-2.78	1.19
2430	56.18	-2.48	1.42
2440	48.79	-3.12	0.98
2450	49.11	-3.08	1.21
2460	52.45	-2.77	1.58
2470	50.28	-2.98	1.65
2480	51.77	-2.85	1.89
2490	51.44	-2.89	2.08
2500	48.66	-3.12	1.93

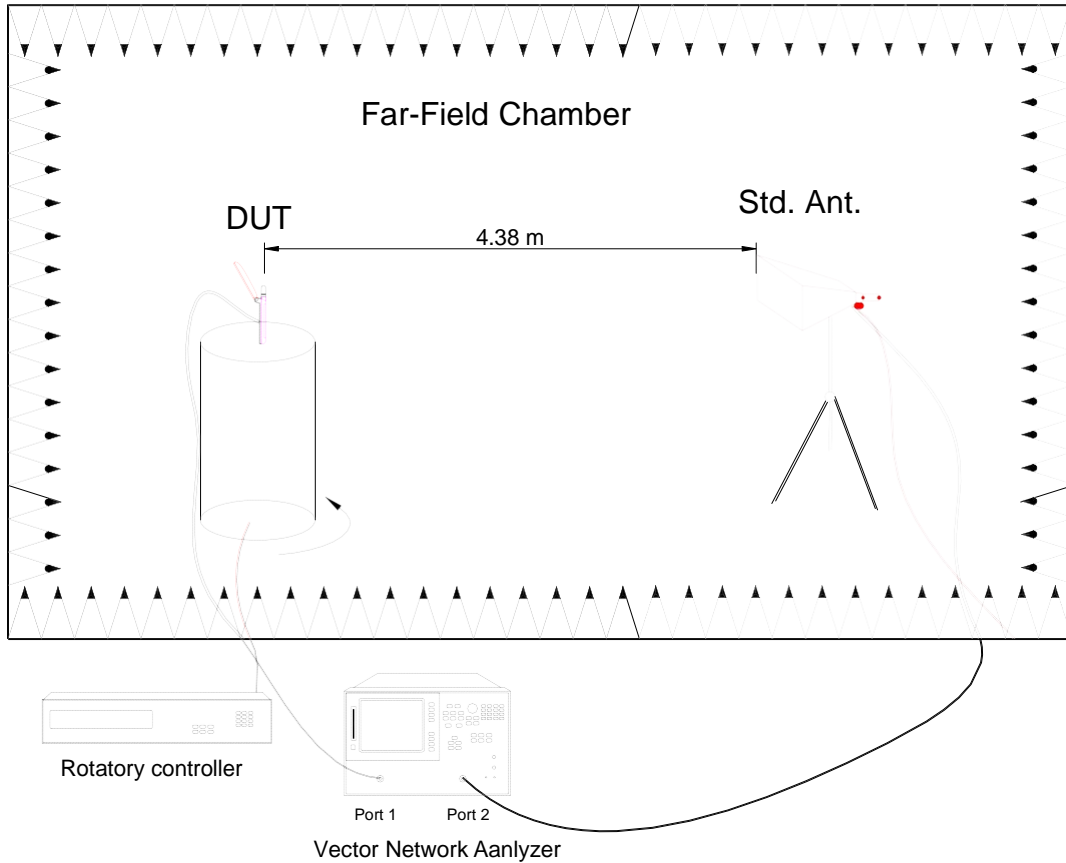


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### 2-4-2 Measure method

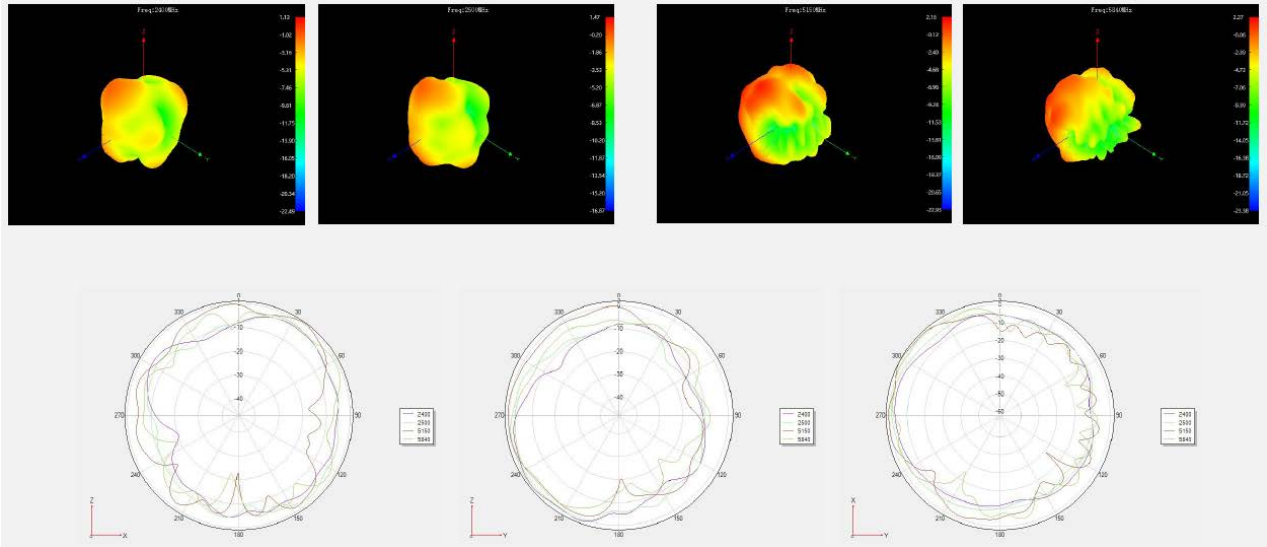
1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

### 2-4-3 Chamber definition



1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quiet room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

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### 3. Mechanical Specification:

#### 3-1. Mechanical Configuration (Unit: mm)

The appearance of the antenna is according to drawing

东莞市同讯电子科技有限公司 Dongguan KingRF Electronics Technology Co., Ltd.		ADDRESS: 东莞市塘厦镇大坪社区同晖南路428号 TEL: 0769-8377779 FAX: 0769-81001838		Reversion A/0	Engineering Change Description NEW	Date 2021.01.23	Owner lixin
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技术要求:

1. 电性参数:
  - 1.1: 阻抗50Ω
  - 1.2: 频段: 2400MHz~2500MHz
  - 1.3: Free test VSWR: 2400~2500MHz < 2
2. 环境:
  - 2.1: 储存温度: -20 TO +60℃
  - 2.2: 工作温度: -20 TO +60℃
- 3: 图中标注 (△) 为重点管控尺寸

Tolerance				CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE	
SPEC. CLASS	A	B	C	D	APPROVALS
< 0.8mm	0.05	0.1	0.1	0.2	DRAWN
0.8-2.5mm	0.08	0.15	0.15	0.3	CHECKED
2.5-50mm	0.12	0.2	0.25	0.4	RESP. ENG
50-250mm	0.25	0.3	0.4	0.5	CHIEF. ENG
ANGLE	0.5				

①	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	1	PCS
ITEM NO.			QTY REQD	UNIT
PARTS LIST				

PART NO.: IA.0320.LA.0FE  
TITLE: CARVII-BT

DATE: 2015.07.31  
DRAWN BY: lixin  
CHECKED BY: ys  
DESIGNED BY: De wen  
APPROVED BY: ys

Scale: 1:1

WORKS: KINGRF

DATE: 2015.07.31  
DRAWN BY: lixin  
CHECKED BY: ys  
DESIGNED BY: De wen  
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