

SPECIFICATION FOR APPROVAL

客 户

CUSTOMER: Launch Tech Co., Ltd.

客 户 料 号

CUSTOMER PART NO.: _____

供 应 商

SUPPLIER : Tongxun Technology

供应商料号

SUPPLIER PART NO. _____

产 品 名 称

PRODUCT NAME: DBSCar VIIBuilt-in Bluetooth antenna

日 期

DATE: 2023-05.-11

Customer Signature :	Customer Seal:
-----------------------------	-----------------------

Supplier Signature:	Supplier Seal :
----------------------------	------------------------

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

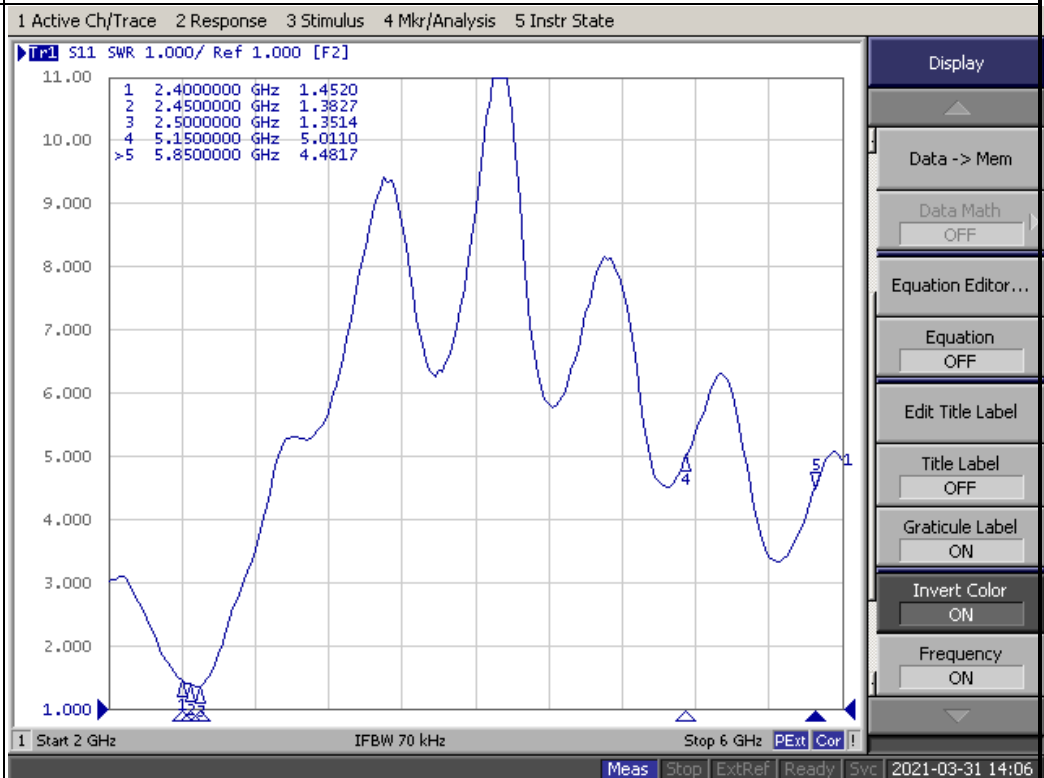
Frequency Band(MHz)	2400	2450	2500
Typical Value:	≤ 2	≤ 2	≤ 2

UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±		 KINGRF TECHNOLOGY CO., LTD.
SCALE:	UNIT: mm	
DRAWN BY: LI	CHECKED BY: YS	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF KINGRF TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DESIGNED BY: De wen	APPROVED BY: YS	
TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification		SPEC REV. P0

2-3-3 Measuring Method

1. A 50 Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR.
2. Keeping this jig away from metal at least 20 cm

2-3-4 Picture



UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±		 KINGRF TECHNOLOGY CO., LTD.
SCALE:	UNIT: mm	
DRAWN BY: LI	CHECKED BY: YS	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF KINGRF TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DESIGNED BY: De wen	APPROVED BY: YS	
TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification		SPEC REV. P0

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

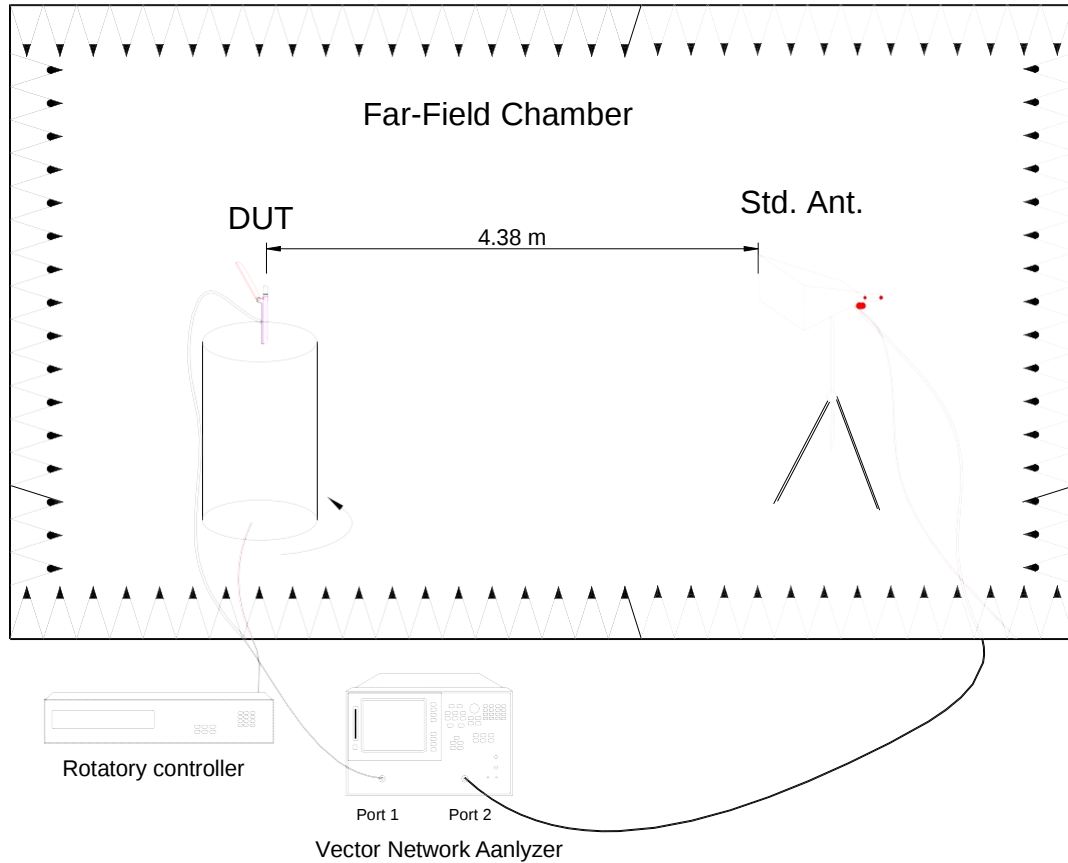


UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±		 KINGRF TECHNOLOGY CO., LTD.
SCALE:	UNIT: mm	
DRAWN BY: LI	CHECKED BY: YS	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF KINGRF TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DESIGNED BY: De wen	APPROVED BY: YS	
TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification		SPEC REV. P0

2-4-2 Measure method

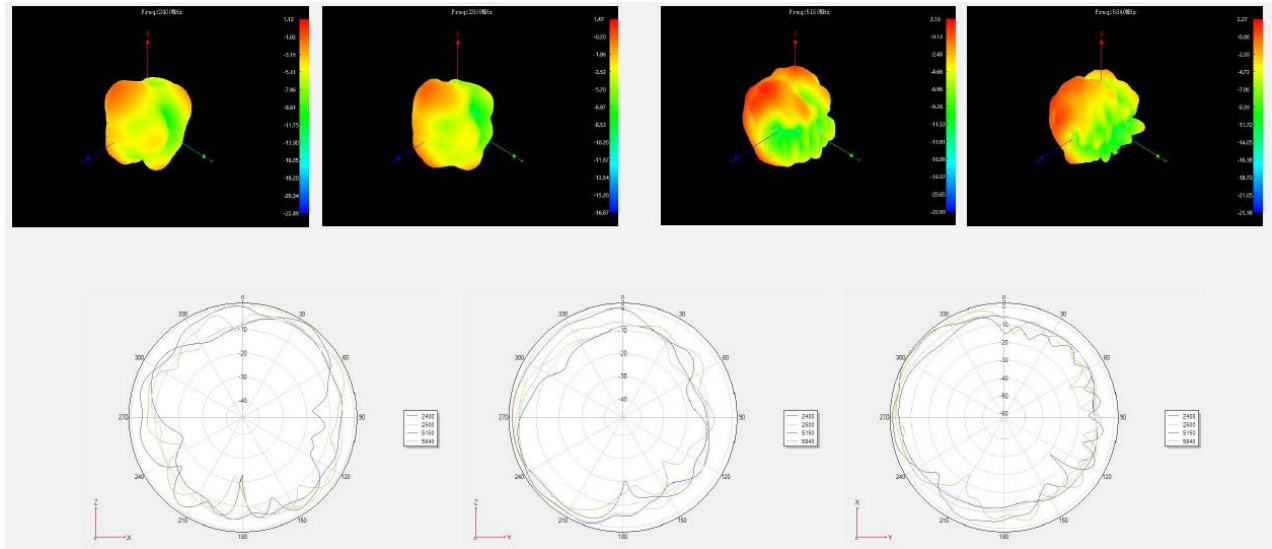
1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

2-4-3 Chamber definition



1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite 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)

UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±		 KINGRF TECHNOLOGY CO., LTD.
SCALE:	UNIT: mm	
DRAWN BY: LI	CHECKED BY: YS	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF KINGRF TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DESIGNED BY: De wen	APPROVED BY: YS	
TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification		SPEC REV.
		P0



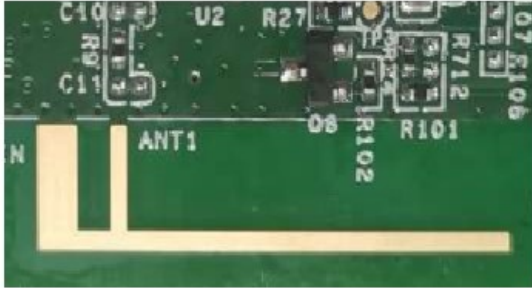
UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±			KINGRF TECHNOLOGY CO., LTD.
SCALE:	UNIT: mm		
DRAWN BY: LI	CHECKED BY: YS	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF KINGRF TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DESIGNED BY: De wen	APPROVED BY: YS		
TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification			SPEC REV.
			P0

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裕南路428号 TEL: 0769-8377779 FAX: 0769-81001806		Revision A/0	Engineering Change Description NEW	Date 2021.01.23	Owner lixin
---	--	---	--	-----------------	---------------------------------------	--------------------	----------------



技术要求:

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

Tolerance				
CLASS	A	B	C	D
< 0.8mm	0.05	0.1	0.1	0.2
0.8~2.5mm	0.05	0.15	0.15	0.3
2.5~50mm	0.12	0.2	0.25	0.4
50~250mm	0.25	0.3	0.4	0.6
ANGLE	0.5			

CAD GENERATED DRAWING, DO NOT MANUALLY UPDATE		KINGRF
APPROVALS		
CHECKED		PART NO.: IA.0320.LA.0FE TITLE: CARVII-BT
RESP' ENG		
DATE		
DATE		
DATE		

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

PARTS LIST	
8	7
6	5
4	3
2	1

UNLESS OTHER SPECIFIED TOLERANCES ON: X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±			KINGRF TECHNOLOGY CO., LTD.
SCALE:	UNIT: mm		
DRAWN BY: LI	CHECKED BY: YS	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF KINGRF TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
DESIGNED BY: De wen	APPROVED BY: YS		
TITLE: IA.0320.LA.0FE Bluetooth Antenna Specification			SPEC REV. P0