TEST REPORT

Report No.:	BCTC2405379042-2E
Applicant:	Shenzhen Kenuo Digital Technology Co., Ltd
Product Name:	RV wireless Bluetooth speaker
Test Model:	K121
Tested Date:	2024-05-31 to 2024-07-24
Issued Date:	2024-07-24

Shenzhen BCTC Testing Co., Ltd.

FCC ID:2AW3E-K121

Product Name:	RV wireless Bluetooth speaker
Trademark:	N/A
Model/Type Reference:	K121 DW- BT-MAG1, KN121, DW
Prepared For:	Shenzhen Kenuo Digital Technology Co., Ltd
Address:	3A01, Building U3, Junxiang U8 Intelligent Manufacturing Industrial Park, Guxing Community, Xixiang Street, Baoan District, Shenzhen, China
Manufacturer:	Shenzhen Kenuo Digital Technology Co., Ltd
Address:	3A01, Building U3, Junxiang U8 Intelligent Manufacturing Industrial Park, Guxing Community, Xixiang Street, Baoan District, Shenzhen, China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China.
Sample Received Date:	2024-05-31
Sample Tested Date:	2024-05-31 to 2024-07-24
Issue Date:	2024-07-24
Report No.:	BCTC2405379042-2E
Test Standards:	FCC CFR 47 part1, 1.1307(b), 1.1310
Test Results:	PASS

Tested by:

Tang Changyu/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Table Of Content

Test Report Declaration Page
1. Version 4
2. Product Information 5
2.1 Product Information 5
2.2 Support Equipment 5
2.3 Test Mode 6
3. Test Facility And Test Instrument Used 7
3.1 Test Facility 7
3.2 Test Instrument Used 7
4. Method Of Measurement 8
4.1 Applicable Standard 8
4.2 Block Diagram Of Test Setup 8
4.3 Limit 9
4.4 Test procedure 9
4.5 Equipment Approval Considerations 10
4.6 E and H field Strength 11
5. Photographs Of Test Set-Up 15

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2405379042-2E	2024-07-24	Original	Valid

2. Product Information

2.1 Product Information

Model/Type Reference:	K121 DW- BT-MAG1, KN121, DW
Model Differences:	All the model are the same circuit and RF module, except model names and appearance of the color.
Hardware Version:	N/A
Software Version:	N/A
Modulation:	ASK
Operation Frequency:	115kHz-205kHz
Antenna installation:	loop coil antenna
Antenna Gain:	0 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Ratings:	DC 7.4V From Battery, DC 5V From USB/Charging Base Charging Base: Input:DC 12V/5V,Output:DC 5V Wireless Charging: 5W

2.2 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	RV wireless Bluetooth speaker	N/A	K121	N/A	EUT
E-2	Adapter	--	CD122	N/A	Auxiliary
E-3	Load	--	--	N/A	Auxiliary

Notes:
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

2.3 Test Mode

AC Mode	Mode 1	Wireless Charging(Full Load)+BT Linking
	Mode 2	Wireless Charging(Half Load)+BT Linking
	Mode 3	Wireless Charging(Null Load)+BT Linking
DC Mode	Mode 4	Wireless Charging(Full Load)+BT Linking
	Mode 5	Wireless Charging(Half Load)+BT Linking
	Mode 6	Wireless Charging(Null Load)+BT Linking

Note:
All test mode were tested and passed, only shows the worst case mode which were recorded in this report.

3. Test Facility And Test Instrument Used

3.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address:1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.
FCC Test Firm Registration Number: 712850
A2LA certificate registration number is: CN1212
ISED Registered No.: 23583
ISED CAB identifier: CN0017

3.2 Test Instrument Used

EMF Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Electromagnet -ic radiation tester	Wavecontrol	SMP160	19SN0980	May 25, 2024	May 24, 2025
Electromagnet -ic field probe	Wavecontrol	WP400-3	20WP120082	May 16, 2024	May 15, 2025
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

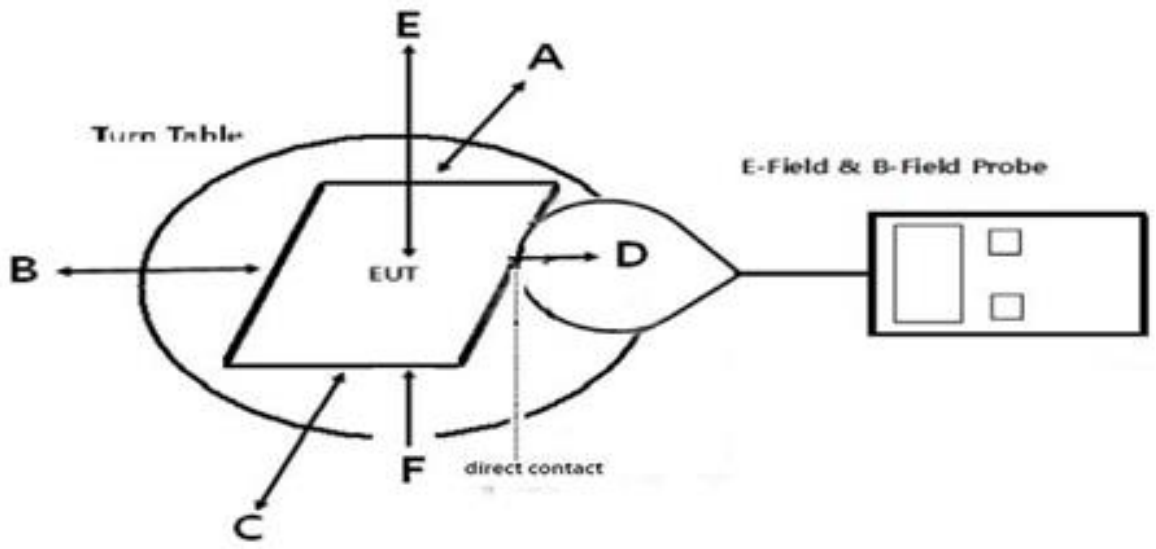
4. Method Of Measurement

4.1 Applicable Standard

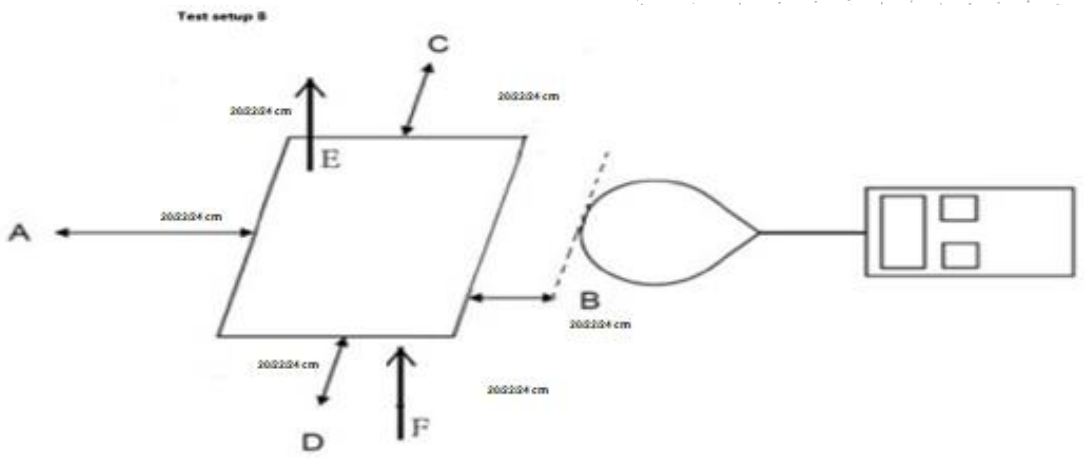
According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v04: RF Exposure Wireless Charging Apps v04.

4.2 Block Diagram Of Test Setup

A:



B:



4.3 Limit

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180 / f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1	30

4.4 Test procedure

a) The RF exposure test was performed in anechoic chamber.
b) The measurement probe was placed at 0 cm surrounding the device for test setup A; and the measurement Probe was placed at 20/22/24 cm for the test setup B.
c) The highest emission level was recorded and compared with limit as soon as measurement of each
d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
d) The EUT was measured according to the dictates of KDB680106 D01v04
e) Remark:The EUT's test position A, B, C, D , E and F is valid for the E and H field measurements.

4.5 Equipment Approval Considerations

The EUT does comply with item 5(b) of KDB 680106 D01v04

1) Power transfer frequency is less than 1MHz
Yes, the device operate in the frequency range from 115-205kHz.

2) Output power from each primary coil is less than or equal to 15 watts.
Yes, the maximum output power of the primary coil is 5W.

3) A client device providing the maximum permitted load is placed in physical contact with the transmitter.
Yes, client device is placed directly in contact with the transmitter.

4) Only § 2.1091-Mobile exposure conditions apply
No, the EUT is portable condition assessment

5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrat ed to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1.
Yes, Conform to

6) For systems with more than one radiating structure, the conditions specified in (5) must be met when th e system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating struct ures operating at maximum power at the same time.
Yes, confirm.

4.6 E and H field Strength

We measured the H-Field Strength of 20cm, 22cm and 24cm, and recorded the test data of the worst 20cm
Mobile: Test Mode 1 (the worst mode)

H-Field Strength at 20 cm surrounding the EUT and 20cm above the top surface of the EUT

Frequency Range (MHz)	Test Position A(uT)	Test Position B(uT)	Test Position C(uT)	Test Position D(uT)	Test Position E(uT)	Test Position Top(uT)
0.115-0.205	0.0147	0.1339	0.1299	0.1398	0.0103	0.0108

Frequency Range (MHz)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position Top(A/m)	50% Limits Test (A/m)	Limits Test (A/m)
0.115-0.205	0.0117	0.1071	0.1039	0.1119	0.0082	0.0087	0.815	1.63

Note:A/m=uT÷1.25

Portable: Test Mode 5 (the worst mode)
Transmitter Battery level: 100% battery

H-Filed Strength at (distance from 2cm to 20cm at 2cm iteration) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(uT)	Test Position B(uT)	Test Position C(uT)	Test Position D(uT)	Test Position E(uT)	Test Position F(uT)
2	0.1384	0.1038	0.0920	0.1154	0.0569	0.0575
4	0.0538	0.0325	0.0328	0.0364	0.0224	0.0228
6	0.0240	0.0139	0.0148	0.0179	0.0124	0.0121
8	0.0190	0.0088	0.0088	0.0116	0.0079	0.0096
10	0.0180	0.0075	0.0077	0.0115	0.0069	0.0084
12	0.0188	0.0078	0.0075	0.0119	0.0078	0.0098
14	0.0180	0.0083	0.0082	0.0104	0.0073	0.0092
16	0.0185	0.0080	0.0088	0.0109	0.0068	0.0092
18	0.0182	0.0086	0.0076	0.0104	0.0075	0.0097
20	0.0188	0.0082	0.0077	0.0107	0.0069	0.0086

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
2	0.1107	0.0830	0.0736	0.0923	0.0455	0.0460	1.63
4	0.0430	0.0260	0.0262	0.0291	0.0179	0.0182	1.63
6	0.0192	0.0111	0.0118	0.0143	0.0099	0.0097	1.63
8	0.0152	0.0070	0.0070	0.0093	0.0063	0.0077	1.63
10	0.0144	0.0060	0.0062	0.0092	0.0055	0.0067	1.63
12	0.0150	0.0062	0.0060	0.0095	0.0062	0.0078	1.63
14	0.0144	0.0066	0.0066	0.0083	0.0058	0.0074	1.63
16	0.0148	0.0064	0.0070	0.0087	0.0054	0.0074	1.63
18	0.0146	0.0069	0.0061	0.0083	0.0060	0.0078	1.63
20	0.0150	0.0066	0.0062	0.0086	0.0055	0.0069	1.63

Note: A/m=uT/1.25

Using Biot-Savart Law, the value of 2cm can be estimated through the test results of 4cm:
Distance: 2cm

Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0.1433	0.0867	0.0873	0.0970	0.0542	0.0552	1.63

Agreement Ratio
Distance: 2cm

Transmitter Battery level: 100% battery						
Test Position	**Test Position A(A/m)**	**Test Position B(A/m)**	**Test Position C(A/m)**	**Test Position D(A/m)**	**Test Position E(A/m)**	**Test Position F(A/m)**
Measure Value (A/m)	0.1107	0.0830	0.0736	0.0923	0.0455	0.0460
Valuation(A/m)	0.1433	0.0867	0.0873	0.0970	0.0542	0.0552
Agreement ratio	25.67	4.36	17.03	4.97	17.45	18.18
Limit	30%	30%	30%	30%	30%	30%
Test result	Pass	Pass	Pass	Pass	Pass	Pass

Using Biot-Savart Law, the value of 4cm can be estimated through the test results of 6cm:
Distance: 4cm

Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0.0452	0.0261	0.0278	0.0337	0.0230	0.0225	1.63

Agreement Ratio
Distance: 4cm

Transmitter Battery level: 100% battery						
Test Position	**Test Position A(A/m)**	**Test Position B(A/m)**	**Test Position C(A/m)**	**Test Position D(A/m)**	**Test Position E(A/m)**	**Test Position F(A/m)**
Measure Value (A/m)	0.0430	0.0260	0.0262	0.0291	0.0179	0.0182
Valuation(A/m)	0.0452	0.0261	0.0278	0.0337	0.0230	0.0225
Agreement ratio	4.99	0.38	5.93	14.65	24.94	21.13
Limit	30%	30%	30%	30%	30%	30%
Test result	Pass	Pass	Pass	Pass	Pass	Pass

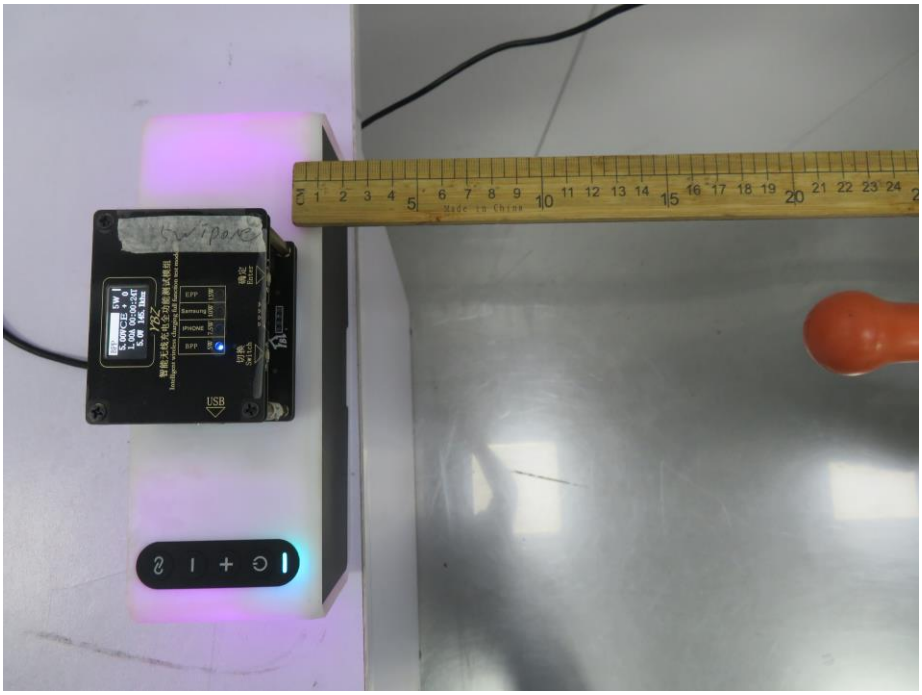
As the model is sufficient, the value of 0cm can be estimated through the results of 2 cm

Using Biot-Savart Law, the value of 0cm can be estimated through the test results of 2cm:
Distance: 0cm

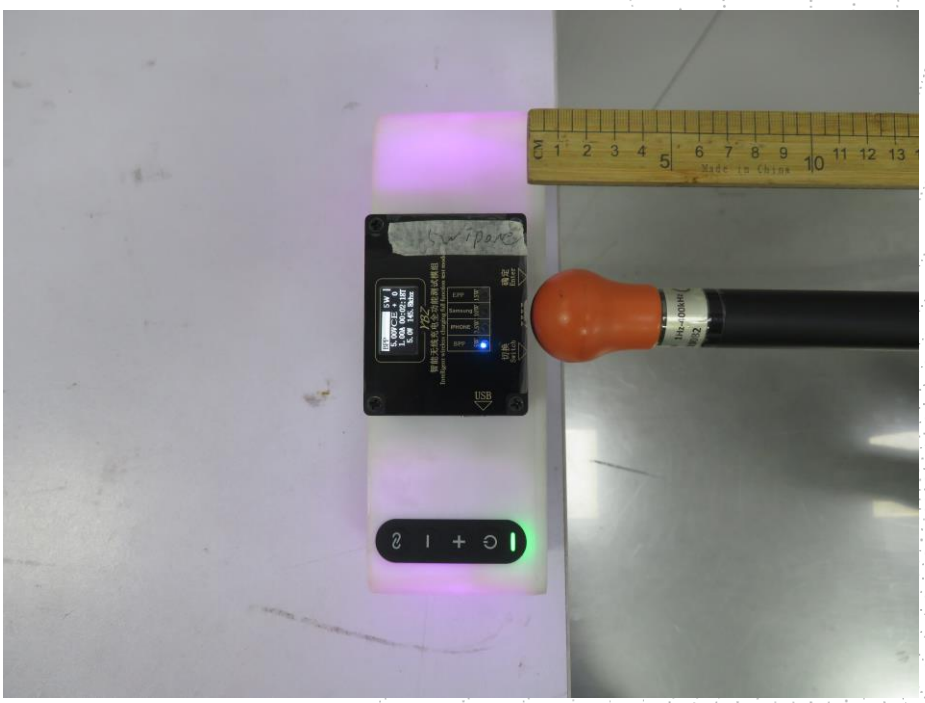
Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0.8536	0.6400	0.5675	0.7117	0.1853	0.1873	1.63
Test result: Pass						

5. Photographs Of Test Set-Up

Mobile: Test Mode 1-3



Portable: Test Mode 4-6



STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:
1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: http://www.chnbctc.com

Consultation E-mail: bctc@bctc-lab.com.cn

Complaint/Advice E-mail: advice@bctc-lab.com.cn

※※※※※ END ※※※※※