

# Radio Exposure Evaluation Report

**FCC ID** : 2A2CA-A8888

**Equipment** : 2.1 multimedia speaker system

**Brand Name** : KC

**Model Name** : SUB-2.1

**Applicant** : DONGGUAN KOON CHEUNG PLASTIC &  
ELECTRONIC.LTD  
3rd INDUSTRY DISTRICT,QING XI  
TOWN,DONGGUANCITY,GUANGDONG,CHINA

**Manufacturer** : DONGGUAN KOON CHEUNG PLASTIC &  
ELECTRONIC.LTD  
3rd INDUSTRY DISTRICT,QING XI  
TOWN,DONGGUANCITY,GUANGDONG,CHINA

**Standard** : 47 CFR FCC Part 2 Subpart J, section 2.1091

The product was received on May 06, 2021, and testing was started from Jul. 12, 2021 and completed on Jul. 30, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR FCC Part 2 Subpart J, section 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Allen Lin

**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**  
No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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**History of this test report**

<b>Report No.</b>	<b>Version</b>	<b>Description</b>	<b>Issued Date</b>
FA0N2612	01	Initial issue of report	Sep. 17, 2021



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

<b>Declaration of Conformity:</b>
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
<b>Comments and Explanations:</b>
None

Reviewed by: Sam Tsai

Report Producer: Jenny Yang

# 1 General Description

## 1.1 Information

### 1.1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
Bluetooth	2400-2483.5	2402-2480	BR / EDR: FHSS (GFSK / $\pi/4$ -DQPSK / 8DPSK)

### 1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Anaccord	AntennaSUB-2.1	PCB Antenna	N/A	1.7

Note 1: The EUT has one antenna.

#### For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna

### 1.1.3 Accessories

Accessories				
BT Controller	Brand Name	Anaccord	Model Name	BT Controller
speaker*2	Brand Name	Anaccord	Model Name	speaker
power cable	Brand Name	GDSZNF	Model Name	NF-006+NF007
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		

Reminder: Regarding to more detail and other information, please refer to user manual.

## 1.2 Testing Location

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<input checked="" type="checkbox"/>	Hsinhua (TAF: 3785)	<b>ADD:</b> No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.) <b>TEL:</b> 886-3-327-3456 <b>FAX:</b> 886-3-327-0973		
Test site Designation No. TW3785 with FCC.				
<input type="checkbox"/>	Wen 33rd.St. (TAF: 3785)	<b>ADD:</b> No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) <b>TEL:</b> 886-3-318-0787 <b>FAX:</b> 886-3-318-0287		
Test site Designation No. TW0008 with FCC.				

## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

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

(B) 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/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F/1500	30
1500-100,000	-	-	1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit. The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;BT-BR	1.70	2.06	3.76	0.50	4.26	0.00267	20	0.00053	1.00000
2.4G;BT-EDR	1.70	2.39	4.09	0.50	4.59	0.00288	20	0.00057	1.00000

—————THE END—————