RF Exposure Evaluation Declaration

Product Name	:	Speaker
Model No.	:	CMCR001
FCC ID	:	YJ7CMCR001

Applicant	:	Black & Decker (Suzhou) Co., Ltd
Address	:	No. 200 Suhong Road, Export Processing Zone, Suzhou Industrial Park, China

Date of Receipt	:	Mar. 20, 2018
Test Date		Mar. 21, 2018~ Apr. 15, 2018
Issued Date	:	Aug. 10, 2018
Report No.	:	1832130R-RF-US-P20V01
Report Version	:	V1.0

Test Report Certification

Issued Date : Aug. 10, 2018
Report No. : 1832130R-RF-US-P20V01

Product Name	:	Speaker
Applicant	:	Black & Decker (Suzhou) Co., Ltd
Address	:	No. 200 Suhong Road, Export Processing Zone, Suzhou Industrial Park, China
Manufacturer	:	Black & Decker (U.S.) Inc.
Address	:	701 East Joppa Rd. Towson, Maryland 21286 U.S.A
Model No.	:	CMCR001
FCC ID	:	YJ7CMCR001
EUT Voltage	:	20Vdc/12Vdc
Test Voltage	:	AC 120V/60Hz
Applicable Standard	:	KDB 447498D01V06 FCC Part1.1310
Test Result	:	Complied
Performed Location	:	DEKRA Testing and Certification (Suzhou) Co., Ltd. No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392

Documented By : Kitty Li

(Adm. Specialist: Kitty Li)

Reviewed By : Frank he

(Senior Engineer: Frank He)

Approved By : Harry Zhao

(Engineering Manager : Harry Zhao)

1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18℃and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Speaker
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information:

Antenna manufacturer	N/A					
Antenna Delivery	☒	1*TX+1*RX	☐	2*TX+2*RX	☐	3*TX+3*RX
Antenna technology	☒	SISO				
	☐	MIMO	☐	Basic		
			☐	CDD		
			☐	Beam-forming		
Antenna Type	☐	External	☐	Dipole		
	☒	Internal	☐	PIFA		
			☒	PCB		
			☐	Ceramic Chip Antenna		
			☐	Metal plate type F antenna		
Antenna Gain	1.5dBi					

- Output Power into Antenna & RF Exposure Evaluation Distance
- Standlone modes

Test Mode	Frequency Band (MHz)	Maximum Output Power to Antenna (dBm)	Directional Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Power Density Limit at R = 20 cm (mW/cm2)
BT	2400 ~ 2483.5 MHz	8.92	1.5	0.0022	1.0

Note: The simultaneous transmission power density is 0.0540mW/cm^2 for Speaker without any other radio equipment.

The End