RF Exposure Evaluation Declaration

FCC ID: 2AB9SM100

APPLICANT: Shenzhen Jonter Digital Co., Ltd

Application Type: Certification

Product: Bluetooth Speaker

Model No.: M100

Serial Model No.: GDI-EXRMX101

Trademark: ECOXGEAR

FCC Classification: FCC Part 15 Spread Spectrum Transmitter(DSS)

Reviewed By: (Jame Yuan)

Approved By: (Robin Wu)

Revision History

Report No.	Version	Description	Issue Date	Note
1903RSU018-U2	Rev. 01	Initial Report	03-29-2019	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Bluetooth Speaker
Model No.	M100
Serial Model No.	GDI-EXRMX101
Brand Name	ECOXGEAR
Bluetooth Specification	v4.2 (Single mode for EDR)
Frequency Range	2402~2480MHz
Type of Modulation	GFSK, Pi/4 DQPSK, 8DPSK
Antenna Type	PCB Antenna
Antenna Gain	0dBi

Note: The different models are only for marketing different clients, others are the same.

2. RF Exposure Evaluation

2.1. 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/cm^2)	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

Calculation Formula: $P_d = (P_{out}*G)/(4*pi*r^2)$

Where

P_d = power density in mW/cm^2

P_{out} = 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

P_d is the limit of MPE, $1mW/cm^2$. 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.

2.2. Test Result of RF Exposure Evaluation

Product	Bluetooth Speaker
Test Item	RF Exposure Evaluation

Antenna Gain = 0dBi

Frequency Band (MHz)	Maximum Peak Power (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
2402 ~ 2480	3.19	0.0004	1

CONCLUSION:

The max Power Density at R (20 cm) = 0.0004mW/cm^2 < 1mW/cm^2.

Therefore, the Min Safety Distance is 20cm.

The End

Appendix A - Test Setup Photograph

Refer to “1903RSU018-UT” file.

Appendix B - EUT Photograph

Refer to “1903RSU018-UE” file.