RF Exposure Requirements

1.1 Product Description for Equipment Under Test (EUT)

Applicant:	Shenzhen Zecai Technology Co., Ltd
Address of applicant:	Unit 2202, Building E, Dongfang Shengshi Garden, Jinpai Community, Buji Street, Longgang District, Shenzhen City, Guangdong Province.China
Manufacturer:	Dongguan Moqu Superior Electronic Tech Co,. Ltd.
Address of manufacturer:	Building 4, Zhongxinbao Bihu Industrial Park, No.1 Senhu Second Road, Fenggang Town, Dongguan City, Guangdong Province, China

Client Information

General Description of EUT	
Product Name:	Karaoke Machine K19
Brand Name:	/
Model No.:	K19
Adding Model(s):	/
Rated Voltage:	DC5V,1.5A or DC3.7V 1500mAh battery
Power Adapter:	/
Software Version:	/
Hardware Version:	/
Serial Number:	Tool V1.1.1
FCC ID:	2BKEW-K19

Technical Characteristics of EUT	
Bluetooth Version:	V5.0 (BLE mode)
Frequency Range:	2402-2480MHz
RF Output Power:	3.68dBm (Conducted)
Data Rate:	1Mbps
Modulation:	GFSK
Quantity of Channels:	40
Channel Separation:	2MHz
Type of Antenna:	Pcb
Antenna Gain:	1.2dBi

1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, the following RF exposure evaluation shall to demonstrate RF exposure compliance.

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0

Where

-f(GHz) is the RF channel transmit frequency in GHz

-Power and distance are rounded to the nearest mW and mm before calculation

-The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

1.3 Calculation Method

Bluetooth

Tx frequency range: 2402~2480MHz

Min. test separation distance: 20cm

Maximum Conducted Output Power: 3.68dBm

RF channel transmit frequency: 2402MHz

Result: 0.11

Limit: 3.0

So the transmitter complies with the RF exposure requirements and the SAR is not required.