RF Exposure

The equipment under test (EUT) is a Jukebox speaker with BT 5.3 function operating in 2402-2480MHz, The EUT is powered by DC 5V 1A by adapter or DC 3.7V rechargeable battery. For more detail information pls. refer to the user manual.

Bluetooth Version: 5.3
Modulation Type: GFSK, π/4-DQPSK and 8-DPSK
Antenna Type: Integral antenna.
Antenna Gain: -0.58dBi.

The nominal conducted output power specified: 2dBm (+/-2dB).
The nominal radiated output power (e.i.r.p) specified: 1.42dBm (+/- 2dB).

The maximun conducted output power for the EUT is 1.69dBm at 3m in the frequency 2402MHz
which is within the production variation.

The minimum conducted output power for the EUT is 0.73dBm at 3m in the frequency 2480MHz
which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting devices is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, According to the KDB 447498 D04 v01 and OET 65, the simple calculation as below:

The source-based time averaged maximum radiated power = 2dBm+2dB= 4dBm = 2.51mW

At the distance (R) of 20cm to 40cm and in 0.3 GHz to 6 GHz, MPE Exclusion Threshold Level:

$$P_{\text{th}}\,(\text{mW}) = ERP_{20\text{ cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\text{ GHz} \le f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \le f \le 6\text{ GHz} \end{cases}$$

The MPE Threshold is 3060mW for general population and uncontrolled exposure in the 2.4GHz frequency range according to FCC Part 1.1307. As the measured power density at 20cm from the transmitter is lower than the MPE Threshold, the compliance to the MPE Threshold can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.