

# RF Exposure Evaluation Report

## 1 RF EXPOSURE

Product Name: Bluetooth speaker

Model No: SM-2301

FCC ID: 2BE4N-SM-2301

### RF Exposure Evaluation

According to KDB447498D01 General RF Exposure Guidance v06 4.3.1. Standalone SAR test exclusion considerations Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

### Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
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>(B) Limits for General Population/Uncontrolled Exposure</b>				
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

F= Frequency in MHz Friis Formula

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$  Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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. If we know the maximum gain of the antenna and the total power input to the antenna,

### Test Result of RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.0 in linear scale.

## Measurement Data

The Max Conducted Peak Output Power data refer to report Report No.:POCE240221001EC001, POCE240221001EC002

## 1.1 EUT RF EXPOSURE

EDR Mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dB)	Maximum tune-up Power		Calculated value (mW/cm <sup>2</sup> )	Exclusion threshold (mW/cm <sup>2</sup> )
			(dBm)	(mW)		
2480MHz	-3.09	-3.09±1	-2.09	0.618	0.000107583	1.0
Conclusion: the calculated value $\leq 1.0$ , SAR is exempted.						

BLE Mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dB)	Maximum tune-up Power		Calculated value (mW/cm2)	Exclusion threshold (mW/cm2)
			(dBm)	(mW)		
2480MHz	3.71	3.71±1	4.71	2.958	0.000514924	1.0
Conclusion: the calculated value $\leq 1.0$ , SAR is exempted.						