# 1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

## 1.1 General Information

### Client Information

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|---|---|
| Applicant: | eMoMo Technology Co., Ltd |
| Address of applicant: | 4th, Floor, Yong He Building ,Tai Wan Industrial Park ,Shi Yan Town ,Bao'an District ,Shen Zhen, 518108, Guangdong, China |
| | |
| Manufacturer: | eMoMo Technology Co., Ltd |
| Address of manufacturer: | 4th, Floor, Yong He Building ,Tai Wan Industrial Park ,Shi Yan Town ,Bao'an District ,Shen Zhen, 518108, Guangdong, China |

### General Description of EUT:

| | |
|---|---|
| Product Name: | E107 Sound system |
| Trade Name | eMoMo |
| Model No.: | E107A |
| Adding Model(s): | E107 |
| Rated Voltage: | AC120V/60Hz |
| FCC ID: | A4E-E107 |
| Equipment Type: | Mobile Device |

### Technical Characteristics of EUT:
### Bluetooth

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|---|---|
| Bluetooth Version: | V5.0 (BR/EDR mode) |
| Frequency Range: | 2402-2480MHz |
| RF Output Power: | 6.569dBm (Conducted) |
| Data Rate: | 1Mbps, 2Mbps, 3Mbps |
| Modulation: | GFSK, $\pi/4$ DQPSK, 8DPSK |
| Quantity of Channels: | 79 |
| Channel Separation: | 1MHz |
| Type of Antenna: | PCB Antenna |
| Antenna Gain: | 0dBi |

## 1.2 Standard Applicable

According to §1.1307(b)(1) and KDB 447498 D01 General RF Exposure Guidance v06, system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

| Frequency range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm$^2$) | Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes) |
|---|---|---|---|---|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842/f | 4.89/f | (900/f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | / | / | F/300 | 6 |
| 1500-100000 | / | / | 5 | 6 |

(b) Limits for General Population / Uncontrolled Exposure

| Frequency range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/cm$^2$) | Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes) |
|---|---|---|---|---|
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | / | / | F/1500 | 30 |
| 1500-100000 | / | / | 1 | 30 |

Note: f = frequency in MHz: * = Plane-wave equivalents power density

## 1.3 MPE Calculation Method

$S = (30*P*G) / (377*R^2)$

S = power density (in appropriate units, e.g., mw/cm$^2$)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

## 1.4 MPE Calculation Result

For Bluetooth

Maximum Tune-Up output power: 7.0 (dBm)

Maximum peak output power at antenna input terminal: 5.01 (mW)

Prediction distance: >20(cm)

Prediction frequency: 2402(MHz)

Antenna gain: 0 (dBi)

Directional gain (numeric gain): 1.00

The worst case is power density at prediction frequency at 20cm: 0.0010 (mw/cm$^2$)

MPE limit for general population exposure at prediction frequency: 1 (mw/cm$^2$)


Result: Pass