

1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant: QAISE INC
Address of applicant: 2626 N WEST LANE UNIT 1000, STOCKTON CA 95205, UNITED STATES

Manufacturer: Guangzhou Golden Electronic Technology Co., Ltd
Address of manufacturer: Team 3, Dongguan Village, Xinhua Street, Huadu District, Guangzhou

General Description of EUT:

Product Name: Rechargeable Party Speaker
Trade Name: Qaise
Model No.: QPB-21002
Adding Model(s): QPB-21001, QPB-11201, QPB-21202
Power adapter: AC Port:AC120V/60Hz
Battery:DC12V
FCC ID: 2A423-QPB-21002
Equipment Type: Mobile device

| Technical Characteristics of EUT: | |
|-----------------------------------|----------------------|
| Bluetooth | |
| Bluetooth Version: | V4.2 (BR/EDR mode) |
| Frequency Range: | 2402-2480MHz |
| RF Output Power: | -6.16dBm (Conducted) |
| Data Rate: | 1Mbps, 2Mbps |
| Modulation: | GFSK, $\pi/4$ DQPSK |
| Quantity of Channels: | 79 |
| Channel Separation: | 1MHz |
| Type of Antenna: | PCB Antenna |
| Antenna Gain: | 1dBi |

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/cm²)

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

Bluetooth

Maximum Tune-Up output power: -6.5(dBm)

Maximum peak output power at antenna input terminal: 0.22(mW)

Prediction distance: >20(cm)

Prediction frequency: 2402 (MHz)

Antenna gain: 1.0(dBi)

Directional gain (numeric gain): 1.26

The worst case is power density at prediction frequency at 20cm: 0.0001(mw/cm²)

MPE limit for general population exposure at prediction frequency: 1 (mw/cm²)

Result: Pass