1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant:	Shenzhen Simolio Electronic Co., Ltd
Address of applicant:	7B/F, 3 Block, Qiyu Industrial Park, Gongle Tiezai Road, Xixiang, Baoan District, Shenzhen, Guangdong, China
Manufacturer:	Shenzhen Simolio Electronic Co., Ltd
Address of manufacturer:	7B/F, 3 Block, Qiyu Industrial Park, Gongle Tiezai Road, Xixiang, Baoan District, Shenzhen, Guangdong, China

General Description of EUT:

Product Name:	Wireless headphones
Trade Name:	SIMOLIO
Model No.:	SM-824D2
Adding Model(s):	SM-824D1, SM-824RX, SM-823 Pro, SM-823D Pro, SM-823, SM-823D, SM-827D1, SM-827D2, SM-829D1, SM-829D2, TA3, TA3D, TA41, TA42, TAR4, TA7D, TA9D
Rated Voltage:	Power in:DC5V Battery:DC3.7V
Power Adapter	MODEL:PS06C050K1000UU INPUT:AC100-240V, 50/60Hz, 0.25A OUTPUT:DC5.0V,1000mA
FCC ID:	2AYV2-SM-824D2
Equipment Type:	portable device

Technical Characteristics of EUT:

Frequency Range:	2406-2472MHz
RF Output Power:	9.023dBm (Conducted)
Modulation:	GFSK
Quantity of Channels:	31
Channel Separation:	2MHz
Type of Antenna:	PIFA Antenna
Antenna Gain:	-2dBi

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 2.4G

Maximum Tune-Up output power: 10(dBm)

Maximum peak output power at antenna input terminal: 10.00(mW)

Prediction distance: >20(cm)

Prediction frequency: 2406(MHz)

Antenna gain: -2 (dBi)

Directional gain (numeric gain): 0.63

The worst case is power density at prediction frequency at 20cm: 0.0013w/cm^2)

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

Result: Pass