

1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 General Information

Client Information

Applicant:

NINGBO XIEN ELECTRONICS CO., LIMITED

Address of applicant:

NO.329 Rongji Road, Luotuo industrial Zone, Ningbo City315202, China

Manufacturer:

NINGBO XIEN ELECTRONICS CO., LIMITED

Address of manufacturer:

NO.329 Rongji Road, Luotuo industrial Zone, Ningbo City315202, China

General Description of EUT:

Product Name:

SPEAKER BOX

Trade Name:

EDISON PROFESSIONA

Model No.:

EP-365

FCC ID:

2ASW6EP-365

Rated Voltage:

Battery:DC12V, AC Input:AC115-230V 50/60Hz

Technical Characteristics of EUT:

Bluetooth Version:

V5.0 (BR/EDR mode)

Frequency Range:

2402-2480MHz

RF Output Power:

3.25dBm (Conducted)

Data Rate:

1Mbps, 2Mbps, 3Mbps

Modulation:

GFSK, Pi/4 QDPSK, 8DPSK

Quantity of Channels:

79

Channel Separation:

1MHz

Type of Antenna:

PCB Antenna

Antenna Gain:

-0.6dBi

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

Maximum Tune-Up output power: 4 (dBm)

Maximum peak output power at antenna input terminal: 2.51 (mW)

Prediction distance: >20(cm)

Prediction frequency: 2480 (MHz)

Antenna gain: -0.6 (dBi)

Directional gain (numeric gain): 0.87

The worst case is power density at prediction frequency at 20cm: 0.0004(mw/cm²)

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

Result: Pass