

1 Safety Human Exposure

1.1 Radio Frequency Exposure Compliance

1.1.1 Electromagnetic Fields

RESULT:

Pass

Test Specification

Test item	:	Self-Ballasted LED Lamp
Identification / Type No.	:	LED2201G8
FCC ID	:	FHO-LED2201G8
IC	:	10912A-LED2201G8
HVIN	:	LED2201G8
Test standard	:	CFR47 FCC Part 2: Section 2.1091 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 D01 v06 FCC KDB Publication 865664 D02 v01r02 RSS-102 Issue 5 February 2021

1.1.1.1 RF Exposure Compliance Requirement for FCC

FCC requirement: Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

Antenna information:

An integral antenna with max. -0.77dBi gain.

➤ Radio Frequency Exposure Limit

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)
300-1,500	--	--	f/1500
1,500-100,000	--	--	1.0

➤ Radio Frequency Exposure Calculation Formula

$$S = \frac{PG}{4\pi R^2}$$

where: 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

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

or:

$$S = \frac{EIRP}{4\pi R^2}$$

where: EIRP = equivalent (or effective) isotropically radiated power

a) RF Exposure Evaluation standalone operations (worse case)

Mode	*Measured RF Output Power (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)
2.4G Zigbee	11.32	10.55	20	0.002	1.0

Note:

- *2.4GHz Zigbee RF Output Power: Refer to CN23RBSX 001

➤ Conclusion

Therefore, the maximum calculations result of above are meet the requirement of Radio Frequency Exposure (MPE) limit.

1.1.1.2 RF Exposure Compliance Requirement for IC

The EUT shall comply with the requirement of RSS-102 section 2.5.2.

Exemption from Routine Evaluation Limits – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- RF exposure evaluation exempted power for 2.4GHz: 2.67 W

The nominal maximum conducted output power specified:

Antenna information:

An integral antenna with max. -0.77dBi gain.

The Max. conducted output power for 2.4GHz Zigbee: 11.32 dBm = 0.0136 W

The Max. e.i.r.p. for 2.4GHz Zigbee: 10.55 dBm = 0.0114 W

“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”