

STATEMENT ON EXPOSURE TO ELECTROMAGNETIC FIELDS

EQUIPMENT

Type of equipment:	LED lamp with Zigbee radio
Type / Model:	LED1624G9
Manufacturer:	IKEA of Sweden AB
By request of:	IKEA of Sweden AB

STANDARD

EN 62479
47 CFR §1.1310
RSS-102 Issue 5
Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency fields – 3
kHz to 300 GHz
AS/NZS 2772.1

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CONDITIONS

Operating frequency range is 2405-2480 MHz.

Highest output power to antenna is +14.0 dBm.

Antenna gain is -3.6 dBi.

A test separation distance of 20 cm is used.

Maximum duty cycle is 22.7%

CALCULATIONS**EIRP:**

$$+14.0 \text{ dBm} + (-3.6) \text{ dBm} = +10.4 \text{ dBm}$$

Conversion dBm to W:

$$\text{Conducted:} \quad 1 \text{ mW} * 10^{(14.0 \text{ dBm}/10)} = 25.1 \text{ mW}$$

$$\text{EIRP:} \quad 1 \text{ mW} * 10^{(10.4 \text{ dBm}/10)} = 11.0 \text{ mW}$$

Time averaged maximum power:

$$\text{Conducted:} \quad 25.1 \text{ mW} * 0.227 = 5.70 \text{ mW}$$

$$\text{EIRP:} \quad 11.0 \text{ mW} * 0.227 = 2.50 \text{ mW}$$

Power density S:

$$S \left[\frac{\text{W}}{\text{m}^2} \right] = \frac{\text{DC} \times \text{EIRP}}{4 \times \pi \times R^2} = \frac{0.227 \times 0.011}{4 \times \pi \times 0.2^2} = 0.005$$

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LIMITS & EVALUATIONS:

Standard	Reference for limit	Limit	Unit	Values	Result
EN 62479	EN 62479 ¹	40	mW	2.5	PASS
CFR 47 §1.1310	CFR 47 §1.1310 ²	10	W/m ²	0.005	PASS
RSS-102 issue 5 (2015)	RSS-102 issue 5 (2015) ³	2.72	W	0.0025	PASS
Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency fields – 3 kHz to 300 GHz	Radiation Protection Standard for Maximum Exposure Levels to Radiofrequency fields – 3 kHz to 300 GHz ⁴	10	W/m ²	0.005	PASS
AS/NZS 2772.1	AS/NZS 2772.2 ⁵	20	mW	2.5	PASS

1. Table A.1: For general public and limbs exposure.
2. Section (e), Table 1 - Limits for Maximum Permissible Exposure (MPE)
3. Section 2.5.2 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
4. Table 7: For general public and 2 GHz- 300 GHz the equivalent plane wave power flux density is: 10
5. Section 3.7.3: In some circumstances an RF exposure evaluation may not be required. This is the case with low-power devices whose nominal average RF radiated power does not exceed 20 mW and which do not produce exceptionally high instantaneous fields.

Intertek Semko AB, Radio& EMC

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