

US Tech Test Report:
 FCC ID:
 IC:
 Test Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 15/IC RSS Certification
 2ADCB-REG127
 6715C-REG127
 19-0493
 January 22, 2020
 Acuity Brands Lighting, Inc
 2ADCB-REG127

Maximum Permissible Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S** as per the respective limits in Table 1 below, at a distance, **d**, of 20 cm from the EUT.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Therefore, for:

MPE for 2400 MHz – 2483.5 MHz

Limit: (1) mW/cm²
 Peak Power (dBm) = 18.94 dBm
 Peak Power (Watts) = 0.078 W
 Gain of Transmit Antenna = 6.0 dB_i = 3.98, numeric
 d = Distance = 20 cm = 0.2 m

$$\begin{aligned}
 S &= (PG / 4\pi d^2) = \text{EIRP} / 4A = 0.078 * (3.98) / 4 * \pi * 0.2 * 0.2 \\
 &= 0.3104 / 0.5030 = 0.6172 \text{ W/m}^2 \\
 &= (0.6172 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\
 &= 0.06172 \text{ mW/cm}^2
 \end{aligned}$$

which is << less than S = 1.0 mW/cm²

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RSS-102 Issue 5, 2.5.2 Exemption Limits for Routine Evaluation – 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:

- below 20 MHz⁶ and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}W$ (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- 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;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

The limits for this radio is:

$$\text{Limit} = 1.31 \times 10^{-2} f^{0.6834} \text{ Watt} = 2.71 \text{ W}$$

EUT source based time averaged (SBTA) = (output power + antenna gain * duty cycle)

$$\text{SBTA} = 18.94 + 6.0 * 1.0 = 24.94 \text{ dBm} = 0.312 \text{ W}$$

Result: 0.312 W << 2.71 W.