MPE Analysis Report

The Equipment Under Test (EUT) is a Connected Wired Decorative Motion Lightwhich its function can be remote controlled by smartphone Apps via 2.4GHz wifi network.

The antenna(s) used in the EUT is integral, internal.
Antenna gain 2 dBi

Operating mode	Range of Peak Conducted Power	Modulation Type
802.11b	14dBm to 26dBm	DSSS
802.11g	14dBm to 26dBm	OFDM
802.11n (HT20)	14dBm to 26dBm	MCSn (n=0 to 7)
802.11n (HT40)	not use as declared by applicant	

For Maximum Permissible Exposure (MPE) evaluation of the unit, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65 and meet the requirement listed in KDB447498.

For the WiFi portion of the unit, the measured powers among all the measured channels were within its production tolerance. The antenna gain is 2 dBi = 1.58 (num gain) and its maximum source-based time-averaging duty factor is 100%. From these data and its operating configuration, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:

The EIRP radiated power
= conducted power (with maximum tolerance) + antenna gain
= 26 dBm + 2 dBi
= 28 dBm (631 mW)

The radiated (EIRP) source-based time-averaging output power
= (631 * 1) mW
= 631 mW

The power density at 20 cm from the antenna
= EIRP / 4πR^2
= 0.126 mW cm-2

In the frequency range of 1,500 - 100,000MHz, the MPE limit is 1.0 mWcm-2 for general population and uncontrolled exposure. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structures and body of the user or nearby persons.

The following RF exposure statement is proposed to be included in the user manual:
“ FCC RF Radiation Exposure Statement
Caution: To maintain compliance with the FCC’s RF exposure guidelines, place the unit at least 20cm from nearby persons.”