MPE Analysis Report

The Equipment Under Test (EUT) is a Smartlink Controlled Extendable Hue Lightstrip. The EUT can operate while connected and controlled by a ZigBee Remote (Provided by Applicant) via ZigBee radio link. The EUT can only support ZigBee. The ZigBee portion occupies frequency range of 2405MHz to 2480MHz (15 channels with channel spacing of 5MHz). The EUT is powered by 120VAC 60Hz.

Main Unit

Antenna Type: Internal, integral
Antenna Gain: 0dBi
Nominal rated field strength: 99.2dBμV/m at 3m
Maximum allowed field strength of production tolerance: +/- 3dB

For the Zigbee module of Smartlink Controlled Extendable Hue Lightstrip, the maximum field strength measured (FS) was 102.2 dBμV/m. The distance (D) between the antenna and the equipment under test (EUT) was 3 meters. And the maximum source-based time-averaging duty factor is 100%. From these data, 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 radiated power = (FS*D)^2 / 30 = 4.979 mW

The radiated (EIRP) source-based time-averaging output power
= (4.979 * 1) mW
= 4.979 mW

The power density at 20 cm from the antenna
= EIRP / 4πR^2
= 0.000991 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 Internet Music System at least 20cm from nearby persons.”