CTK Co., Ltd.

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RF EXPOSURE EVALUATION

Applicant   : KMW INC.

Applicant Address   : 183-6 Youngchun-ro, Dongtan-myun, Hwasung-si, Kyungki-do, Republic of Korea

FCC ID   : ORI-HR110

Kind of Product   : LED STREET LIGHT

Equipment model name   : HR110-A3S50xxx

RF power   : -0.86 dBm(0.820 mW) Peak Conducted

Antenna type   : Planar Inverted F antenna

Antenna Gain   : 2.13 dBi

Frequency Range   : 2405 MHz - 2480 MHz

Number of channels   : 16 CH

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** MPE Calculations **

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.   The MPE calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

EIRP = P + G EIRP = -0.86 + 2.13 = 1.27 dBm	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)

The numeric gain(G) of the antenna with a gain specified in dB is determined by:

$G = Log^{-1}$ (dB antenna gain / 10)

$G = Log^{-1}$ (2.13 / 10)

G = 1.63

Power density at the specific separation:

$S = PG/(4R^2\pi)$
 	
$S = (1.34)/(4 * 20^2 * \pi)$
 	
S = 0.0003   mW/cm^2
	Where,
	    S = Maximum power density (mW/cm^2)
	P = Power input to the antenna (mW)
	G = Numeric power gain of the antenna
	R = Distance to the center of the radiation of the antenna
	       (20cm = limit for MPE)

The Maximum permissible exposure (MPE) for the general population is 1 mW/cm^2 .
The power density at 20cm does not exceed the 1 mW/cm^2 limit.

Estimated safe separation:

$R = \sqrt{(PG / 4\pi)}$
 	
$R = \sqrt{(1.34 / 4\pi)}$
 	
R = 0.3 cm
	Where,
	    P = Power input to the antenna (mW)
	G = Numeric power gain of the antenna
	R = Distance to the center of the radiation of the antenna
	       (20cm = limit for MPE)