RF EXPOSURE EVALUATION

EUT Specification

EUT	Nanoleaf Smater IQ antaxy Art Display Case
Model Number	SQFX01K
FCC ID	2AEWY-SQFX01
Antenna gain (Max)	2.15dBi
Operation Frequency	2.4G :2.405-2.480GHz WLAN: 2.412GHz ~ 2.462GHz
Input Rating	DC 42V
Max. output power	BT: 8.06 dBm WLAN: IEEE 802.11b: 15.51 dBm IEEE 802.11g: 13.67dBm IEEE 802.11n-HT20: 13.56 dBm IEEE 802.11n-HT40: 13.31 dBm

Test Requirement:

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm^2)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	**--**	**--**	**F/300**	**6**
1500-100000	**--**	**--**	**5**	**6**
(B) Limits for General Population/Uncontrol Exposures				
300-1500	**--**	**--**	**F/1500**	**6**
1500-100000	**--**	**--**	**1**	**30**

11.1 Friis transmission formula: Pd= (Pout*G)\ (4*pi*R^2)

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

R= distance between observation point and center of the radiator in cm=20cm

Pd the limit of MPE, 1mW/cm^2. If we know the maximum gain of the nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

11.2 Measurement Result

Antenna gain: 2.15 dBi

2.4G:

Mode	Channel Freq. (MHz)	Max. Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain（Numeric）	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
O-QPSK	2405	8.06	8±1	9	1.641	0.002593	1

WIFI:

Mode	Channel Freq. (MHz)	Max. Measured power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain（Numeric）	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
IEEE 802.11b	2462	15.51	15±1	16	1.641	0.012997	1

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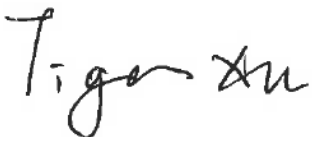

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