FCC RF Exposure

EUT Description: FixtureSmart
Model name:LPS-FS-12,LPS-FS-9,LPS-FS-18,LPS-FS-24,LPS-FS-36,LPS-FS-12PW,LPS-FS-9PW,LPS-FS-18PW, LPS-FS-24PW,LPS-FS-36PW,LPS-FS-12PWC,LPS-FS-9PWC,LPS-FS-18PWC,LPS-FS-24PWC,LPS-FS-36PWC
FCC ID:2BBD7-LPS-FS-12
Equipment type: mobile equipment

1. Limits

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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) 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
300–1500			f/1500	30
1500–100,000			1.0	30

F = frequency in MHz

Formula: $Pd = (Pout*G)/(4*\pi*r^2)$

Where :

Pd = power density in mW/cm^2,

Pout = output power to antenna in mW;

G = gain of antenna in linear scale,

$\pi = 3.14$;

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

Pd id the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Test Result of RF Exposure Evaluation

	Output power （dBm/ mW）	Antenna Gain(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
802.11b	4.38/2.7416	1.22	0.00072	1.0	Pass
802.11g	3.98/2.5003	1.22	0.00066	1.0	Pass
802.11n(20MHz)	3.56/2.2699	1.22	0.00060	1.0	Pass
802.11n(40MHz)	3.33/2.1528	1.22	0.00057	1.0	Pass

BT:

EIRP=EMeas+20log(dmeas)-104.7

EIRP is the equivalent isotropically radiated power,

E_{Meas} in dBmis the field strength of the emission at the measurement distance, in dB u V/m

d_{Meas} is the measurement distance, in m

Field strength(dBuV/m)	EIRP(dBm)	Max tune-up(mW)	Antenna Gain(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
89.61	-5.5476	0.2788	1.22	0.00007	1.0	Pass
88.53	-6.6276	0.2174	1.22	0.00006	1.0	Pass
90.66	-4.4976	0.3550	1.22	0.00009	1.0	Pass