## FCC§15.247 (i), §1.1307 (b) (1) & §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

## **Applicable Standard**

According to subpart 15.247(i)and subpart §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Report No.: RSZ151201006-00B

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure										
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)						
0.3-1.34	614	1.63	*(100)	30						
1.34–30	824/f	2.19/f	*(180/f²)	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; \* = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

## **Calculated Formulary:**

Predication of MPE limit at a given distance

 $S = PG/4\pi R^2 = power density (in appropriate units, e.g. mW/cm^2);$ 

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

## **Calculated Data:**

Mode	Frequency (MHz)	Antenna Gain		Max tune-up Conducted Power		Evaluation Distance	Power Density	MPE Limit (mW/cm²)
		(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mW/cm <sup>2</sup> )	(=== )
802.11g	2412-2462	2.5	1.78	15.50	35.48	20	0.013	1.0
802.11n20	2412-2462	2.5	1.78	18.00	63.10	20	0.022	1.0
5.8G	5727-5799	2.5	1.78	15.50	35.48	20	0.013	1.0

According to KDB 447498 D01 General RF Exposure Guidance v06,EUT has one 2.4G Wifi module and one 5.8G module transmitting simultaneously. And the worst case sum of MPE ratio is 0.035 which is less than 1.0, So the collocation exposure exclusion applies.

**Result: Compliance** 

FCC Part 15.247 Page 8 of 41