MPE Calculation

RF feauture (Worst-case mode)	Frequency range (MHz)			Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm^2)	Requriment (mW/cm^2)
802.11n(HT20) - 2TX	2412.00	~	2462.00	18.50	5.06	23.56	226.987	0.046	1.000
802.11n(HT20) - 2TX	5180.00	~	5240.00	21.00	6.78	27.78	599.792	0.120	1.000
802.11n(HT20) - 2TX	5260.00	~	5320.00	21.00	6.82	27.82	605.341	0.121	1.000
802.11n(HT20) - 2TX	5500.00	~	5700.00	18.50	7.83	26.33	429.537	0.086	1.000
802.11n(HT20) - 2TX	5745.00	~	5825.00	21.00	6.88	27.88	613.763	0.123	1.000
		~							
		~							
		~							

Note: Please refer to the operation description for Max tune-up power.

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 sample calculation for this exposure is shown below.

▪ **S =** EIRP / (4 R^2 π)

= 226.987 / (4 X 20^2 X π)

= 0.046 mW/cm^2

- Note

S= Maximum power density(mW/cm^2)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(2

▪ Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)			Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm^2)	Averageing time (minutes)
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	~	1,500			f / 1500	30
1,500	~	100,000			1.0	30

Conclusion : The exposure condition of this device is compliant with FCC

RF Exposure Compliance for simultaneous operations

- **Worst case for simultaneous operations**
- WALN 2.4GHz MIMO + WLAN 5GHz(NII-3) MIMO

RF function or mode(Worst case)	802.11n(HT20) - 2TX	802.11n(HT20) - 2TX	-	-	-	-	-	Σ of MPE ratios
Band	2.4GHz	NII-3	-	-	-	-	-	
Power Density (mW/cm2)	0.046	0.123	-	-	-	-	-	
Requirement (mW/cm2)	1.000	1.000	-	-	-	-	-	
MPE ratio (Power Density/Requirement)	0.046	0.123	-	-	-	-	-	
Worst case(MPE ratio)	0.046	0.123	-	-	-	-	-	0.169

- **Requirment = Σ of MPE ratios ≤ 1**

Conclusion : The exposure condition of this device is compliant with FCC rules.