MPE Calculation : WLAN(2.4GHz)

Frequency range :	2412.00 MHz ~ 2462.00 MHz
Max Target power :	16.00 dBm (802.11n40)
Measured Conducted power :	14.94 dBm (802.11n40)
Maximum antenna gain(PK) :	2.18 dBi
Maximum EIRP :	18.18 dBm(65.766)mW

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.

▪ **Calculation of power density at the specific separation**

▪ $S = EIRP / (4 R^2 \pi)$

    - **Note**

    $= \dfrac{65.766}{(4 \times 20^2 \times \pi)}$

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

    $= 0.01308$ mW/cm^2

EIRP = Equivalent Isotropic Radiated Power(mW)

R = Distance to the center of the radiation of the antenna(20cm)

▪ **Requirment =** **1** **mW/cm²**
   (FCC Part 1.1310 Table 1 Limits for maximum permissible exposure(MPE)

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

MPE Calculation : WLAN(5GHz)

Frequency range :	5745.00 MHz ~ 5825.00 MHz
Max Target power :	17.00 dBm (802.11a)
Measured Conducted power :	15.91 dBm (802.11a)
Maximum antenna gain(PK) :	2.36 dBi
Maximum EIRP :	19.36 dBm(86.298)mW

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.

▪ **Calculation of power density at the specific separation**

▪ $S = EIRP / (4 R^2 \pi)$

$= 86.298 \ / (4 \times 20^2 \times \pi)$

$= 0.01717 \ mW/cm^2$

- **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(20cm)

▪ **Requirment = 1 mW/cm²**
(FCC Part 1.1310 Table 1 Limits for maximum permissible exposure(MPE)

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

MPE Calculation : BT(2.4GHz)

Frequency range :	2402.00 MHz ~ 2480.00 MHz
Max Target power :	5.50 dBm (1Mbps)
Measured Conducted power :	4.59 dBm (1Mbps)
Maximum antenna gain(PK) :	-0.22 dBi
Maximum EIRP :	5.28 dBm(3.373)mW

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.

- **Calculation of power density at the specific separation**

- **S** = EIRP / (4 R^2 π)	- **Note**
= **3.373** / (4 X 20^2 X π)	S = Maximum power density(mW/cm^2)
= **0.00067** mW/cm^2	EIRP = Equivalent Isotropic Radiated Power(mW)
	R = Distance to the center of the radiation of the antenna(20cm)

- **Requirment =** **1** **mW/cm²**
  (FCC Part 1.1310 Table 1 Limits for maximum permissible exposure(MPE)

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

RF Exposure Compliance for simultaneous operations

▪ **Configurations for simultaneous operations**

- **Configuration 1:** WLAN 2.4GHz 802.11b/g/n + Bluetooth 2.4GHz

- **Configuration 2:** WLAN 5GHz 802.11a/n/ac + Bluetooth 2.4GHz

- **Configuration 3:** N/A

Note: Above configuration was declared from applicant.

▪ **Configurations for simultaneous operations**

RF function	WLAN		BT		N/A		Σ of MPE ratios
Band	2.4GHz	5GHz	2.4GHz	N/A	N/A	N/A	
Power Density (mW/cm2)	0.01308	0.01717	0.00067				
Requirement (mW/cm2)	1.000	1.000	1.000				
MPE ratio (Power Density/Requirement)	0.013	0.017	0.001				
Configuration 1 (MPE ratio)	0.013		0.001				**0.014**
Configuration 2 (MPE ratio)		0.017	0.001				**0.018**
Configuration 3 (MPE ratio)							

Note: The maximum power density in each RF function was used for above table.

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

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