MPE Calculations(WLAN: 802.11b)

- Frequency range : 2412 MHz ~ 2462 MHz
- Measured RF output power 18.12 dBm
- Target Power & Tolerance : 17.50 dBm ± 1 dB (Max. 18.5 dBm & Min. 16.5 dBm)
- Maximum antenna peak gain : 4.25 dBi

- **Maximum output power for the calculatio 18.50 dBm**

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the

The MPE calculation for this exposure is shown below.

▪ **EIRP** = P + G = 18.50 dBm + 4.25 dBi = **22.75 dBm** = **188.365 mW**	- **Note** P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi)

- **Power density at the specific separation**

▪ **S** = EIRP / (4 R^2 π) = **188.365** / (4 X 20^2 X π) = **0.037475** mW/cm^2	- **Note** S = Maximum power dencity(mW/cm^2) EIRP = Equivalent Isotropic Radiated Power(mW) R = Distance to the center of the radiation of the antenna(20cm)

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm^2.

MPE Calculations(WLAN: 802.11g)

- Frequency range : 2412 MHz ~ 2462 MHz
- Measured RF output power 22.34 dBm
- Target Power & Tolerance : 21.50 dBm ± 1 dB (Max. 22.5 dBm & Min. 20.5 dBm)
- Maximum antenna peak gain : 4.25 dBi

- **Maximum output power for the calculatio 22.50 dBm**

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the

The MPE calculation for this exposure is shown below.

▪ **EIRP** = P + G = 22.50 dBm + 4.25 dBi = **26.75 dBm** = **473.152 mW**	- **Note** P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi)

- **Power density at the specific separation**

▪ **S** = EIRP / (4 R^2 π) = **473.152** / (4 X 20^2 X π) = **0.094131** mW/cm^2	- **Note** S = Maximum power dencity(mW/cm^2) EIRP = Equivalent Isotropic Radiated Power(mW) R = Distance to the center of the radiation of the antenna(20cm)

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm^2.

MPE Calculations(WLAN: 802.11n HT20)

- Frequency range : 2412 MHz ~ 2462 MHz
- Measured RF output power 20.57 dBm
- Target Power & Tolerance : 20.00 dBm ± 1 dB (Max. 21 dBm & Min. 19 dBm)
- Maximum antenna peak gain : 4.25 dBi

- **Maximum output power for the calculatio 21.00 dBm**

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the

The MPE calculation for this exposure is shown below.

▪ **EIRP** = P + G = 21.00 dBm + 4.25 dBi = **25.25 dBm** = **334.966 mW**	- **Note** P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi)

- **Power density at the specific separation**

▪ **S** = EIRP / (4 R^2 π) = **334.966** / (4 X 20^2 X π) = **0.066640** mW/cm^2	- **Note** S = Maximum power dencity(mW/cm^2) EIRP = Equivalent Isotropic Radiated Power(mW) R = Distance to the center of the radiation of the antenna(20cm)

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm^2.

MPE Calculations(Bluetooth)

- Frequency range : 2402 MHz ~ 2480 MHz
- Measured RF output power 3.8 dBm
- Target Power & Tolerance : 2.50 dBm ± 1.5 dB (Max. 4 dBm & Min. 1 dBm)
- Maximum antenna peak gain : -3.26 dBi

- **Maximum output power for the calculatio 4.00 dBm**

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the

The MPE calculation for this exposure is shown below.

▪ **EIRP** = P + G = 4.00 dBm + -3.26 dBi = **0.75 dBm** = **1.188 mW**	**- Note** P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi)

- Power density at the specific separation

▪ **S** = EIRP / (4 R^2 π) = **1.188** / (4 X 20^2 X π) = **0.000237** mW/cm^2	**- Note** S = Maximum power dencity(mW/cm^2) EIRP = Equivalent Isotropic Radiated Power(mW) R = Distance to the center of the radiation of the antenna(20cm)

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm^2.

RF Exposure Compliance for simultaneous operations

▪ Configurations for simultaneous operations

- **Configuration 1:** 2.4GHz WLAN + Bluetooth

▪ Result

RF function	802.11b	802.11g	802.11n (HT20)	BT	Total Power Density (mW/cm^2)
MODE	2.4GHz	2.4GHz	2.4GHz	2.4GHz	
Power Density (mW/cm^2)	0.037475	**0.09413**	0.06664	**0.000237**	
Configuration 1		**O 0.09413**		**O 0.000237**	**0.094367**

Note 1: The maximum power density in each RF function was used for above table.