

MPE Calculations(WLAN: 802.11b)

- Frequency range : 2412 MHz ~ 2462 MHz
- Measured RF output power 18.12 dBm
- Target Power & Tolerance : 17.50 dBm $\pm$ 1 dB (Max. 18.5 dBm & Min. 16.5 dBm)
- Maximum antenna peak gain : 4.25 dBi
- **Maximum output power for the calculation 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)
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- Power density at the specific separation

▪ S = EIRP / (4 R² π) = 188.365 / (4 X 20² X π) = 0.037475 mW/cm²	- Note - S = Maximum power density(mW/cm²) - EIRP = Equivalent Isotropic Radiated Power(mW) - R = Distance to the center of the radiation of the antenna(20cm)
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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/cm².

MPE Calculations(WLAN: 802.11g)

- Frequency range : 2412 MHz ~ 2462 MHz
- Measured RF output power 22.34 dBm
- Target Power & Tolerance : 21.50 dBm $\pm$ 1 dB (Max. 22.5 dBm & Min. 20.5 dBm)
- Maximum antenna peak gain : 4.25 dBi
- **Maximum output power for the calculation 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)
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- Power density at the specific separation

▪ S = EIRP / (4 R² π) = 473.152 / (4 X 20² X π) = 0.094131 mW/cm²	- Note - S = Maximum power density(mW/cm²) - EIRP = Equivalent Isotropic Radiated Power(mW) - R = Distance to the center of the radiation of the antenna(20cm)
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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/cm².

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 $\pm$ 1 dB (Max. 21 dBm & Min. 19 dBm)
- Maximum antenna peak gain : 4.25 dBi
- **Maximum output power for the calculation 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)
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- Power density at the specific separation

▪ S = EIRP / (4 R² π) = 334.966 / (4 X 20² X π) = 0.066640 mW/cm²	- Note - S = Maximum power density(mW/cm²) - EIRP = Equivalent Isotropic Radiated Power(mW) - R = Distance to the center of the radiation of the antenna(20cm)
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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/cm².

MPE Calculations(Bluetooth)

- Frequency range : 2402 MHz ~ 2480 MHz
- Measured RF output power 3.8 dBm
- Target Power & Tolerance : 2.50 dBm $\pm$ 1.5 dB (Max. 4 dBm & Min. 1 dBm)
- Maximum antenna peak gain : -3.26 dBi
- **Maximum output power for the calculation 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)
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- Power density at the specific separation

▪ S = EIRP / (4 R² π) = 1.188 / (4 X 20² X π) = 0.000237 mW/cm²	- Note - S = Maximum power density(mW/cm²) - EIRP = Equivalent Isotropic Radiated Power(mW) - R = Distance to the center of the radiation of the antenna(20cm)
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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/cm².

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		0.09413		0.000237	

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