

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

▪ $S = \text{EIRP} / (4 R^2 \pi)$ $= \frac{65.766}{(4 \times 20^2 \times \pi)}$ $= \frac{0.01308}{\text{mW/cm}^2}$	- 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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▪ 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

▪ $S = \text{EIRP} / (4 R^2 \pi)$ $= \frac{86.298}{(4 \times 20^2 \times \pi)}$ $= \frac{0.01717}{\text{mW/cm}^2}$	- 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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▪ Requirement = **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

▪ $S = \text{EIRP} / (4 R^2 \pi)$ $= \frac{3.373}{(4 \times 20^2 \times \pi)}$ $= \frac{0.00067}{\text{mW/cm}^2}$	- 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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▪ Requirement = **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/cm ²)	0.01308	0.01717	0.00067				
Requirement (mW/cm ²)	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.

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

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