Maximum Permissive Exposure

FCC ID: BEJWF500
Product Description: Wi-Fi/Bluetooth Dongle
Model No: AN-WF500

1. According to FCC CFR 47 §1.1310, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

Table 1 Limits for Maximum Permissible Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits For Occupational / Control Exposures (f = frequency)				
30-300	61.4	0.163	1.0	6
300-1500	…	…	f/300	6
1500-100,000	…	…	5.0	6
(B) Limits For General Population / Uncontrolled Exposure (f = frequency)				
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

2. MPE Calculation

LG Electronics Inc. declares that the product described above has been evaluated and found to comply with the RF exposure limits for humans, as specified based on ANSI/FCC recommendation.

For 2.4GHz WLAN

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.393 Numerical,** and the highest power output (P) is **88.308mW**, the power density (S) is **0.0245mW/cm^2.**

RF Exposure Calculations:
$S = (P * G) / (4 * \pi * r^2)$ or $r = \sqrt{(P * G) / (4 * \pi * S)}$

Where :

Based on safety distance (r) =	20	cm		
Highest Power Output (P) =	19.46	dBm =	**88.308**	mW
Antenna Gain (G) =	1.44	dBi =	**1.393**	Numerical
MPE (S) = (P*G) / (4*π*r^2) =	**(88.308*1.393)/(4*π*20^2) =**		**0.0245**	mW/cm^2

For 5GHz WLAN

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.151 Numerical,** and the highest power output (P) is **85.901mW**, the power density (S) is **0.0197mW/cm^2.**

RF Exposure Calculations:
S = (P * G) / (4* π * r^2) or r = $\sqrt{(P * G) / (4 * \pi * S)}$

Where :

Based on safety distance (r) =	20	cm		
Highest Power Output (P) =	19.34	dBm =	**85.901**	mW
Antenna Gain (G) =	0.61	dBi =	**1.151**	Numerical
MPE (S) = (P*G) / (4*π*r^2) =	**(85.901*1.151)/(4*π*20^2) =**		**0.0197**	mW/cm^2

For BT

Based on safety distance (r) **20cm**, the antenna gain (G) is **0.470 Numerical,** and the highest power output (P) is **3.486mW**, the power density (S) is **0.0003mW/cm^2.**

RF Exposure Calculations:
S = (P * G) / (4* π * r^2) or r = $\sqrt{(P * G) / (4 * \pi * S)}$

Where :

Based on safety distance (r) =	20	cm		
Highest Power Output (P) =	5.423	dBm =	**3.486**	mW
Antenna Gain (G) =	-3.28	dBi =	**0.470**	Numerical
MPE (S) = (P*G) / (4*π*r^2) =	**(3.486*0.470)/(4*π*20^2) =**		**0.0003**	mW/cm^2

2.4GHz WIFI+BT

WLAN MPE (mW/cm^2)	BT MPE (mW/cm^2)	Total MPE (mW/cm^2)	Limit (mW/cm^2)	Compliance or not
0.0245	0.0003	**0.0248**	1	YES

5GHz WIFI+BT

WLAN MPE (mW/cm^2)	BT MPE (mW/cm^2)	Total MPE (mW/cm^2)	Limit (mW/cm^2)	Compliance or not
0.0197	0.0003	**0.0200**	1	YES

Sincerely Yours,

Ben Cheng

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