Maximum Permissive Exposure

FCC ID: WL6GWS-QX
Product Name: Intelligent Gateway
Model No: GWS-QX.

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

Elitegroup Computer Systems Co., Ltd. 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.

2.1. WIFI MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **2.042 Numerical,** and the highest power output (P) is **220.2939mW**, the power density (S) is **0.089492mW/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)=	23.43	dBm =	**220.293**	mW
Antenna Gain (G)=	3.1	dBi =	**2.042**	Numerical
MPE (S) = (P*G) / ($4*\pi*r^2$) =	**= (231.739*2.042)/($4*4*\pi*20^2$)=**		**0.089492**	mW/cm^2

2.2. BLE MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **2.042 Numerical,** and the highest power output (P) is **4.831mW**, the power density (S) is **0.001963mW/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)=	6.84	dBm =	**4.831**	mW
Antenna Gain (G)=	3.1	dBi =	**2.042**	Numerical
MPE (S) = (P*G) / (4*π*r^2) =	**= (4.831*2.042)/(4*4*π*20^2)=**		**0.001963**	mW/cm^2

2.3. BT MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **2.042 Numerical,** and the highest power output (P) is **7.816mW**, the power density (S) is **0.003175mW/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)=	8.930	dBm =	**7.816**	mW
Antenna Gain (G)=	3.1	dBi =	**2.042**	Numerical
MPE (S) = (P*G) / (4*π*r^2) =	**= (8.590*2.042)/(4*4*π*20^2)=**		**0.003175**	mW/cm^2

MPE [WIFI+ BLE]				
WIFI (mW/cm^2)	BLE (mW/cm^2)	BT (mW/cm^2)	Total(mW/cm^2)	Limit (mW/cm^2)
0.089492	**0.001963**	**---**	**0.091455**	≦1

MPE [WIFI+ BT]				
WIFI (mW/cm^2)	BLE (mW/cm^2)	BT (mW/cm^2)	Total(mW/cm^2)	Limit (mW/cm^2)
0.089492	**---**	**0.003175**	**0.092667**	≦1

Sincerely Yours,

Ben Cheng

Mr. Ben Cheng
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