

Maximum Permissive Exposure

FCC ID: RMXHSBUB-SDS

IC:1000V-HSBUBSDS

Product Name: Notebook

Model No: HSBUB-SDS

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

For WLAN in 2.4GHz:

Based on safety distance 20cm, the antenna gain is 1.93dBi, and the power output is 279.25mW, the power density is 0.086mW/cm².

RF Exposure Calculations:

$$S = (P * G) / (4 * \pi * r^2) \text{ or } r = \sqrt{(P * G) / (4 * \pi * S)}$$

Where S = Power Density in mW/cm²

P = 24.46dBm = 279.25mW

G = 1.93dBi = 1.559 Numerical

r = 20cm

$$S = 279.25 * 1.559 / 4 * \pi * 20^2 = 0.086 \text{mW/cm}^2$$

For WLAN in 5GHz:

Based on safety distance 20cm, the antenna gain is 0.84dBi, and the power output is 279.25mW, the power density is 0.067mW/cm^2.

RF Exposure Calculations:

$$S = (P * G) / (4 * \pi * r^2) \text{ or } r = \sqrt{(P * G) / (4 * \pi * S)}$$

Where S = Power Density in mW/cm^2
P = 24.46dBm = 279.25mW
G = 0.84dBi = 1.213 Numerical
r = 20cm

$$S = 279.25 * 1.213 / 4 * \pi * 20^2 = 0.067 \text{mW/cm}^2$$

For BT:

Based on safety distance 20cm, the antenna gain is 1.82dBi, and the power output is 13.737mW, the power density is 0.004mW/cm^2.

RF Exposure Calculations:

$$S = (P * G) / (4 * \pi * r^2) \text{ or } r = \sqrt{(P * G) / (4 * \pi * S)}$$

Where S = Power Density in mW/cm^2
P = 11.379dBm = 13.737mW
G = 1.82dBi = 1.52 Numerical
r = 20cm

$$S = 13.737 * 1.52 / 4 * \pi * 20^2 = 0.004 \text{mW/cm}^2$$

For WWAN:

Based on safety distance 20cm, the antenna gain is -3.44dBi, and the power output is 1475.7mW, the power density is 0.132mW/cm^2.

RF Exposure Calculations:

$$S = (P * G) / (4 * \pi * r^2) \text{ or } r = \sqrt{(P * G) / (4 * \pi * S)}$$

Where S = Power Density in mW/cm^2
P = 31.69dBm = 1475.70 mW
G = -3.44 dBi = 0.452 Numerical
r = 20cm

$$S = 1475.7 * 0.452 / 4 * \pi * 20^2 = 0.132 \text{mW/cm}^2$$

WWAN MPE (mW/cm^2)	WLAN MPE (mW/cm^2)	BT MPE (mW/cm^2)	Total MPE (mW/cm^2)	Limit (mW/cm^2)	Compliance or not
0.132	0.086	0.004	0.222	1	YES



Mr. Ben Cheng
Manager
AUDIX Technology Corporation