

Maximum Permissive Exposure

FCC ID: A3LWCH941M

Product Name: Wi-Fi/BT Transceiver

Model No: WCH941M

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

Sony Group Corporation 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.

Mode	Max Output Power (dBm)	Tune-up factor	Tune-up max power (dBm)
BT	14.53	1.194	15.3
Wireless 2.4G	29.60	1.096	30.0
Wireless 5G	22.34	1.164	23.0
Wireless 6G	11.50	1.202	12.3

**The value presented in the MPE is the maximum tune-up power.

1. MPE Calculation

● BT MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **0.605Numerical**, and the highest power output (P) is **33.884mW**, the power density (S) is **0.004078mW/cm²**.

RF Exposure Calculations:

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

Where :

Based on safety distance (r)=	20 cm
Highest Power Output (P)=	15.3 dBm = 33.884 mW
Antenna Gain (G)=	-2.18 dBi = 0.605 Numerical
MPE (S) = (P*G) / (4*π*r ²) =	= (33.884*0.605)/(4*π*20²)= 0.004078 mW/cm²

- Wireless 2.4G MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.164Numerical**, and the highest power output (P) is **1000.000mW**, the power density (S) is **0.231570mW/cm²**.

RF Exposure Calculations:

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

Where :

Based on safety distance (r)=	20 cm
Highest Power Output (P)=	30.0 dBm = 1000.000 mW
Antenna Gain (G)=	0.66 dBi = 1.164 Numerical
MPE (S) = (P*G) / (4* π *r ²) =	= (1000.000*1.164)/(4*π*20²)= 0.231570 mW/cm²

- Wireless 5G MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.429Numerical**, and the highest power output (P) is **199.526mW**, the power density (S) is **0.056723mW/cm²**.

RF Exposure Calculations:

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

Where :

Based on safety distance (r)=	20 cm
Highest Power Output (P)=	23.0 dBm = 199.526 mW
Antenna Gain (G)=	1.55 dBi = 1.429 Numerical
MPE (S) = (P*G) / (4* π *r ²) =	= (199.526*1.429)/(4*π*20²)= 0.056723 mW/cm²

- Wireless 6G MPE

Based on safety distance (r) **20cm**, the antenna gain (G) is **1.084Numerical**, and the highest power output (P) is **16.982mW**, the power density (S) is **0.003662mW/cm²**.

RF Exposure Calculations:

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

Where :

Based on safety distance (r)=	20 cm
Highest Power Output (P)=	12.3 dBm = 16.982 mW
Antenna Gain (G)=	0.35 dBi = 1.084 Numerical
MPE (S) = (P*G) / (4* π *r ²) =	= (16.982*1.084)/(4*π*20²)= 0.003662 mW/cm²

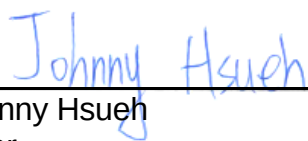
2. MPE Calculation for Simultaneous

MPE			
BT (mW/cm ²)	Wireless 2.4G (mW/cm ²)	Total (mW/cm ²)	Limit (mW/cm ²)
0.004078	0.231570	0.235648	≤ 1

MPE			
BT (mW/cm ²)	Wireless 5G (mW/cm ²)	Total (mW/cm ²)	Limit (mW/cm ²)
0.004078	0.056723	0.060801	≤ 1

MPE			
BT (mW/cm ²)	Wireless 6G (mW/cm ²)	Total (mW/cm ²)	Limit (mW/cm ²)
0.004078	0.003662	0.007740	≤ 1

Sincerely Yours,



Mr. Johnny Hsueh
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