



Shenzhen Huaxin Information Technology Service Co., Ltd

101, R & D Building, No.3 guansheng 4th Road, Luhua Community, Guanhu Street, Longhua District, Shenzhen, Guangdong, China

Tel: +86-755-21018313 Http: //www.tecovo.net

Maximum Permissible Exposure Evaluation

FCC ID: 2BFLD-CDW20800

EUT Specification

Product Name:	Dual-band WiFi6 11ax+BT5.4 Module
Trade Mark:	/
Model/Type reference:	CDW-20800D4-10
Listed Model(s):	/
Operating Frequency band:	BT: 2402~2480MHz WLAN: 2412~2462MHz RLAN: 5180~5240MHz 5745~5828MHz
Device category:	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Exposure classification:	☐ Occupational/Controlled exposure (S=5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity:	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain:	BT/WLAN: 3.48dBi RLAN: 4.63dBi
Evaluation applied:	☒ MPE Evaluation ☐ SAR Evaluation

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

F = frequency in MHz

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²



P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

$P_i = 3.1416$

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE $1\text{mW}/\text{cm}^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, We will know the distance where the MPE limit is reached.

Measurement Result

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Verdict
BLE	2402	3.48	3.82	4±1	5	0.00140	1.000	PASS
8-DPSK	2402	3.48	4.25	4±1	5	0.00140	1.000	PASS
802.11b	2462	3.48	14.47	14±1	15	0.01402	1.000	PASS
802.11a	5180	4.63	11.69	12±1	13	0.01153	1.000	PASS
802.11a	5785	4.63	12.10	12±1	13	0.01153	1.000	PASS

The WLAN and BT can transmit simultaneously (Worst-case: BT+2.4GHz Wi-Fi)

WLAN Output power/ Threshold power	BT Output power/ Threshold power	Total of the ratios	Limit	Verdict
0.01402/1=0.01402	0.00140/1=0.00140	0.01542	1	PASS

Total E-field strength = ((E-field strength)/ (Limit) + (E-field strength)/ (Limit)...) ≤ 1

Note:

For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****