

4 FCC §15.407(f), §1.1310, §2.1091 - Maximum Permissible Exposure (MPE)

4.1 Applicable Standard

According to §15.407(f) and §1.1310, U-NII devices are subject to the radio frequency radiation exposure requirements specified in §§ 1.1307(b), and 2.1091 of this chapter, as appropriate. All equipment shall be considered to operate in a "general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request

4.2 RF Exposure Evaluation Result

MPE evaluation for single transmission:

Mode	Frequency Range (MHz)	Antenna Gain		Target Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G WIFI	2412-2462	2.18	1.65	23.5	223.87	20	0.07	1.0
5G WIFI B1	5180-5240	4.45	1.65	21.0	125.89	20	0.07	1.0
5G WIFI B4	5745-5825	4.45	2.79	24.0	251.19	20	0.14	1.0
WCDMA B V	826.4-846.6	2.13	1.63	23.5	223.87	20	0.07	0.551
WCDMA B II	1852.4-1907.6	3.42	2.20	23.5	223.87	20	0.10	1.0
LTE B II	1850.7-1909.3	3.42	2.20	24.0	251.19	20	0.11	1.0
LTE B IV	1710.7-1754.3	3.68	2.33	24.0	251.19	20	0.17	1.0
LTE B XII	699.7-715.3	0.35	1.08	24.0	251.19	20	0.05	0.466

MPE evaluation for simultaneous transmission:

2.4G WIFI, 5G WIFI and 3G&4G can transmit at the same time, MPE evaluation is as below formula:

$PD1/Limit1 + PD2/Limit2 + \dots < 1$, PD (Power Density)

MPE evaluation=

MPE of 2.4G WIFI/1 + MPE of 5G WIFI/1 + MPE of 3G&4G/0.564
 $= 0.07/1 + 0.14/1 + 0.07/0.551 = 0.34 < 1.0$

Result: MPE evaluation of single and simultaneous transmission meet the requirement of standard.