

FCC ID: 2BLHF-JT215M-H01

Maximum Permissible Exposure (MPE)

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)

According to KDB447498 D01 General RF Exposure Guidance V06

According to FCC 2.1091: For purposes of this section, the definitions in § 1.1307(b)(2) of this chapter shall apply. A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location while transmitting. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal desktop computer, are considered to be mobile devices if they meet the 20-centimeter separation requirement.

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 * P * G}}{d}$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Average RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 * P * G}{377 * D^2}$$

From the EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

2.4G WIFI:

Operation Frequency: WIFI 802.11b/g/n/ax20 HT20: 2412-2462MHz,
WIFI 802.11n/ax40 HT40:2422-2452MHz
Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna

Antenna gain: 3.98dBi;

R=20cm

mW=10^(dBm/10)

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density (mW/cm2)
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2412	802.11b	15.07	15±1	16	39.811	3.98	2.50	0.0198	1
2437		15.41	15±1	16	39.811	3.98	2.50	0.0198	1
2462		13.55	13±1	14	25.119	3.98	2.50	0.0125	1
2412	802.11g	13.73	13±1	14	25.119	3.98	2.50	0.0125	1
2437		12.95	13±1	14	25.119	3.98	2.50	0.0125	1
2462		13.45	13±1	14	25.119	3.98	2.50	0.0125	1
2412	802.11n HT20	13.72	13±1	14	25.119	3.98	2.50	0.0125	1
2437		12.87	13±1	14	25.119	3.98	2.50	0.0125	1
2462		13.23	13±1	14	25.119	3.98	2.50	0.0125	1
2422	802.11n(H T40)	13.3	13±1	14	25.119	3.98	2.50	0.0125	1
2437		12.84	13±1	14	25.119	3.98	2.50	0.0125	1
2452		12.19	13±1	14	25.119	3.98	2.50	0.0125	1
2412	802.11 ax20	13.55	13±1	14	25.119	3.98	2.50	0.0125	1
2437		12.84	13±1	14	25.119	3.98	2.50	0.0125	1
2462		13.3	13±1	14	25.119	3.98	2.50	0.0125	1
2422	802.11 ax40	13.14	13±1	14	25.119	3.98	2.50	0.0125	1
2437		12.76	13±1	14	25.119	3.98	2.50	0.0125	1
2452		12.28	13±1	14	25.119	3.98	2.50	0.0125	1

5G WIFI:

Operation Frequency: WIFI 802.11a/ac/ax/n(HT20): 5180-5240MHz; 5745-5825MHz;

WIFI 802.11ac/ax/n(HT40): 5190-5230MHz;5755-5795MHz;

Power density limited: 1mW/cm

Antenna Type: PCB antenna

Antenna gain: 3.68dBi;

R=20cm

mW=10^(dBm/10)

5.2G

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density (mW/cm2)
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
5180	a	10.45	10±1	11	12.589	3.68	2.33	0.0058	1
5200	a	10.21	10±1	11	12.589	3.68	2.33	0.0058	1
5240	a	10.98	10±1	11	12.589	3.68	2.33	0.0058	1
5180	n20	10.27	10±1	11	12.589	3.68	2.33	0.0058	1
5200	n20	10.24	10±1	11	12.589	3.68	2.33	0.0058	1
5240	n20	10.96	10±1	11	12.589	3.68	2.33	0.0058	1
5190	n40	9.98	10±1	11	12.589	3.68	2.33	0.0058	1
5230	n40	10.93	10±1	11	12.589	3.68	2.33	0.0058	1
5180	ac20	9.93	10±1	11	12.589	3.68	2.33	0.0058	1
5200	ac20	10.14	10±1	11	12.589	3.68	2.33	0.0058	1
5240	ac20	10.69	10±1	11	12.589	3.68	2.33	0.0058	1
5190	ac40	10.04	10±1	11	12.589	3.68	2.33	0.0058	1
5230	ac40	10.81	10±1	11	12.589	3.68	2.33	0.0058	1
5180	ax20	9.88	10±1	11	12.589	3.68	2.33	0.0058	1
5200	ax20	10.22	10±1	11	12.589	3.68	2.33	0.0058	1
5240	ax20	10.81	10±1	11	12.589	3.68	2.33	0.0058	1
5190	ax40	10.05	10±1	11	12.589	3.68	2.33	0.0058	1
5230	ax40	10.77	10±1	11	12.589	3.68	2.33	0.0058	1

5.8G

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
5745	a	10.95	11±1	12	15.849	3.68	2.33	0.0074	1
5785	a	11.61	11±1	12	15.849	3.68	2.33	0.0074	1
5825	a	11.44	11±1	12	15.849	3.68	2.33	0.0074	1
5745	n20	10.86	11±1	12	15.849	3.68	2.33	0.0074	1
5785	n20	11.67	11±1	12	15.849	3.68	2.33	0.0074	1
5825	n20	11.35	11±1	12	15.849	3.68	2.33	0.0074	1
5755	n40	11.08	11±1	12	15.849	3.68	2.33	0.0074	1
5795	n40	11.74	11±1	12	15.849	3.68	2.33	0.0074	1
5745	ac20	10.87	11±1	12	15.849	3.68	2.33	0.0074	1
5785	ac20	11.6	11±1	12	15.849	3.68	2.33	0.0074	1
5825	ac20	11.32	11±1	12	15.849	3.68	2.33	0.0074	1
5755	ac40	11.1	11±1	12	15.849	3.68	2.33	0.0074	1
5795	ac40	11.64	11±1	12	15.849	3.68	2.33	0.0074	1
5745	ax20	10.88	11±1	12	15.849	3.68	2.33	0.0074	1
5785	ax20	11.4	11±1	12	15.849	3.68	2.33	0.0074	1
5825	ax20	11.2	11±1	12	15.849	3.68	2.33	0.0074	1
5755	ax40	10.96	11±1	12	15.849	3.68	2.33	0.0074	1
5795	ax40	11.65	11±1	12	15.849	3.68	2.33	0.0074	1

Note: NO simultaneous transmissions are possible for this device of Wi-Fi 5G + Wi-Fi 2.4G.

Signature:

Date: 2024-11-11



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