FCC ID: 2AKCT-SPCP2S

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

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 (V/m) = $\frac{\sqrt{30*P*G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

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.

BT:

Measurement Result

Operation Frequency: 2402MHz~2480MHz

Power density limited: 1mW/ cm^2

Antenna Type: FPCB antenna

Antenna gain: 4.26dBi;

R=20cm

mW=10^(dBm/10)

antenna gain Numeric=10^(dBi/10)= 10^(4.26/10)=2.67

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density (mW/cm2)
2402	DH5	4.173	3.5±1	4.5	2.818	4.26	2.67	0.0015	1
2441		3.464	3.5±1	4.5	2.818	4.26	2.67	0.0015	1
2480		3	3.5±1	4.5	2.818	4.26	2.67	0.0015	1
2402	2DH5	3.646	3±1	4	2.512	4.26	2.67	0.0013	1
2441		2.681	3±1	4	2.512	4.26	2.67	0.0013	1
2480		2.273	3±1	4	2.512	4.26	2.67	0.0013	1
2402	3DH5	3.809	3±1	4	2.512	4.26	2.67	0.0013	1
2441		3.044	3±1	4	2.512	4.26	2.67	0.0013	1
2480		2.661	3±1	4	2.512	4.26	2.67	0.0013	1

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density (mW/cm2)
2402	GFSK(1M)	4.04	4±1	5	3.162	4.26	2.67	0.0017	1
2440		3.95	4±1	5	3.162	4.26	2.67	0.0017	1
2480		3.39	4±1	5	3.162	4.26	2.67	0.0017	1
2402	GFSK(2M)	4.05	4±1	5	3.162	4.26	2.67	0.0017	1
2440		3.96	4±1	5	3.162	4.26	2.67	0.0017	1
2480		3.34	4±1	5	3.162	4.26	2.67	0.0017	1

2.4G WIFI:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,
WIFI 802.11n HT40:2422-2452MHz
Power density limited: 1mW/ cm^2
Antenna Type: FPCB antenna
Antenna gain: 4.26dBi;
R=20cm
mW=10^(dBm/10)
antenna gain Numeric=10^(dBi/10)= 10^(4.26/10)=2.67

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density (mW/cm2)
2412	802.11b	18.04	18±1	19	79.433	4.26	2.67	0.0421	1
2437		18.92	18±1	19	79.433	4.26	2.67	0.0421	1
2462		18.25	18±1	19	79.433	4.26	2.67	0.0421	1
2412	802.11g	15.18	16±1	17	50.119	4.26	2.67	0.0266	1
2437		16.05	16±1	17	50.119	4.26	2.67	0.0266	1
2462		15.56	16±1	17	50.119	4.26	2.67	0.0266	1
2412	802.11n H20	13.71	13±1	14	25.119	4.26	2.67	0.0133	1
2437		13.7	13±1	14	25.119	4.26	2.67	0.0133	1
2462		13.75	13±1	14	25.119	4.26	2.67	0.0133	1
2422	802.11n(HT40)	13.51	13±1	14	25.119	4.26	2.67	0.0133	1
2437		13.2	13±1	14	25.119	4.26	2.67	0.0133	1
2452		13.86	13±1	14	25.119	4.26	2.67	0.0133	1

5G WIFI:

Operation Frequency: WIFI 802.11a/ac/n(HT20): 5180-5240MHz;5260-5320MHz,5500-5700MHz,5745-5825MHz;WIFI 802.11ac/n(HT40): 5190-5230MHz;5270-5310MHz,5510-5670MHz;5755-5795MHz; WIFI 802.11ac80:5210-5210MHz;5290-5290MHz;5530-5610MHz;5775-5775MHz
Power density limited: 1mW/cm
Antenna Type: FPCB antenna
Antenna gain:3.69dBi;
R=20cm
mW=10^(dBm/10)
antenna gain Numeric=10^(dBi/10)= 10^(3.69/10)=2.34

5.2G

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
5180	a	10.42	10±1	11	12.589	3.69	2.34	0.0059	1
5200	a	10.85	10±1	11	12.589	3.69	2.34	0.0059	1
5240	a	10.96	10±1	11	12.589	3.69	2.34	0.0059	1
5180	n20	10.64	11±1	12	15.849	3.69	2.34	0.0074	1
5200	n20	11.23	11±1	12	15.849	3.69	2.34	0.0074	1
5240	n20	11.17	11±1	12	15.849	3.69	2.34	0.0074	1
5190	n40	10.88	10±1	11	12.589	3.69	2.34	0.0059	1
5230	n40	10.97	10±1	11	12.589	3.69	2.34	0.0059	1
5180	ac20	10.44	10±1	11	12.589	3.69	2.34	0.0059	1
5200	ac20	10.86	10±1	11	12.589	3.69	2.34	0.0059	1
5240	ac20	10.84	10±1	11	12.589	3.69	2.34	0.0059	1
5190	ac40	10.43	11±1	12	15.849	3.69	2.34	0.0074	1
5230	ac40	10.7	11±1	12	15.849	3.69	2.34	0.0074	1
5210	ac80	11.07	11±1	12	15.849	3.69	2.34	0.0074	1

5.3G

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
5260	a	12.03	12±1	13	19.953	3.69	2.34	0.0093	1
5280	a	11.4	12±1	13	19.953	3.69	2.34	0.0093	1
5320	a	11.66	12±1	13	19.953	3.69	2.34	0.0093	1
5260	n20	11.25	11±1	12	15.849	3.69	2.34	0.0074	1
5280	n20	10.75	11±1	12	15.849	3.69	2.34	0.0074	1
5320	n20	11.23	11±1	12	15.849	3.69	2.34	0.0074	1
5270	n40	10.95	11±1	12	15.849	3.69	2.34	0.0074	1
5310	n40	11.51	11±1	12	15.849	3.69	2.34	0.0074	1
5260	ac20	11.38	11±1	12	15.849	3.69	2.34	0.0074	1
5280	ac20	10.86	11±1	12	15.849	3.69	2.34	0.0074	1
5320	ac20	11.26	11±1	12	15.849	3.69	2.34	0.0074	1
5270	ac40	10.8	11±1	12	15.849	3.69	2.34	0.0074	1
5310	ac40	11.41	11±1	12	15.849	3.69	2.34	0.0074	1
5290	ac80	11.28	11±1	12	15.849	3.69	2.34	0.0074	1

5.6G

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
5500	a	10.01	10±1	11	12.589	3.69	2.34	0.0059	1
5600	a	9.09	9±1	10	10.000	3.69	2.34	0.0047	1
5700	a	8.45	9±1	10	10.000	3.69	2.34	0.0047	1
5500	n20	9.62	9±1	10	10.000	3.69	2.34	0.0047	1
5600	n20	9.28	9±1	10	10.000	3.69	2.34	0.0047	1
5700	n20	7.73	7±1	8	6.310	3.69	2.34	0.0029	1
5510	n40	9.47	9±1	10	10.000	3.69	2.34	0.0047	1
5590	n40	9.26	9±1	10	10.000	3.69	2.34	0.0047	1
5670	n40	9.29	9±1	10	10.000	3.69	2.34	0.0047	1
5500	ac20	9.69	9±1	10	10.000	3.69	2.34	0.0047	1
5600	ac20	9.37	9±1	10	10.000	3.69	2.34	0.0047	1
5700	ac20	8.07	9±1	10	10.000	3.69	2.34	0.0047	1
5510	ac40	9.46	9±1	10	10.000	3.69	2.34	0.0047	1
5590	ac40	9.43	9±1	10	10.000	3.69	2.34	0.0047	1
5670	ac40	9.31	9±1	10	10.000	3.69	2.34	0.0047	1
5530	ac80	9.53	9±1	10	10.000	3.69	2.34	0.0047	1
5610	ac80	9.99	9±1	10	10.000	3.69	2.34	0.0047	1

5.8G

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
5745	a	10.44	10±1	11	12.589	3.69	2.34	0.0059	1
5785	a	9.54	10±1	11	12.589	3.69	2.34	0.0059	1
5825	a	10.53	10±1	11	12.589	3.69	2.34	0.0059	1
5745	n20	9.81	10±1	11	12.589	3.69	2.34	0.0059	1
5785	n20	9.29	10±1	11	12.589	3.69	2.34	0.0059	1
5825	n20	10.1	10±1	11	12.589	3.69	2.34	0.0059	1
5755	n40	10.36	10±1	11	12.589	3.69	2.34	0.0059	1
5795	n40	9.61	10±1	11	12.589	3.69	2.34	0.0059	1
5745	ac20	9.83	10±1	11	12.589	3.69	2.34	0.0059	1
5785	ac20	9.31	10±1	11	12.589	3.69	2.34	0.0059	1
5825	ac20	9.89	10±1	11	12.589	3.69	2.34	0.0059	1
5755	ac40	10.35	10±1	11	12.589	3.69	2.34	0.0059	1
5795	ac40	9.6	10±1	11	12.589	3.69	2.34	0.0059	1
5775	ac80	9.9	10±1	11	12.589	3.69	2.34	0.0059	1

Note: This product does not support 2.4G band and 5G band simultaneous delivery.

Signature:
Date: 6/7/2023

NAME AND TITLE (Please print or type): alex li/Manager

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