

FCC ID: 2BQKJROOTPILOTPANEL

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)

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

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

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.

BT:

Measurement Result

Operation Frequency: 2402MHz~2480MHz

Power density limited: $1\text{mW}/\text{cm}^2$

Antenna Type: FPC antenna

Antenna gain: 0.34dBi;

R=20cm

$\text{mW}=10^{(\text{dBm}/10)}$

antenna gain Numeric= $10^{(\text{dBi}/10)}=10^{(0.34/10)}=1.08$

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		
2402	DH5	2.7	2±1	3	1.995	0.34	1.08	0.0004	1
2441		2.72	2±1	3	1.995	0.34	1.08	0.0004	1
2480		2.14	2±1	3	1.995	0.34	1.08	0.0004	1
2402	2DH5	-0.72	-1.5±1	-0.5	0.891	0.34	1.08	0.0002	1
2441		-1.3	-1.5±1	-0.5	0.891	0.34	1.08	0.0002	1
2480		-1.35	-1.5±1	-0.5	0.891	0.34	1.08	0.0002	1
2402	3DH5	-0.72	-1.5±1	-0.5	0.891	0.34	1.08	0.0002	1
2441		-1.4	-1.5±1	-0.5	0.891	0.34	1.08	0.0002	1
2480		-1.47	-1.5±1	-0.5	0.891	0.34	1.08	0.0002	1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
2402	GFSK(1M)	-0.34	-1±1	0	1.000	0.34	1.08	0.0002	1
2440		-0.52	-1±1	0	1.000	0.34	1.08	0.0002	1
2480		-0.92	-1±1	0	1.000	0.34	1.08	0.0002	1

2.4G WIFI:

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

Antenna Type: FPC antenna

Antenna gain1/2: 0.34dBi/-0.03 dBi

R=20cm

mW=10^{^(dBi/10)}

antenna1 gain Numeric=10^{^(dBi/10)}= 10^{^(0.34/10)}=1.08

antenna2 gain Numeric=10^{^(dBi/10)}= 10^{^(0.34/10)}=0.99

ANT1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
2412	802.11b	15.84	15±1	16	39.811	0.34	1.08	0.0086	1
2437		14.93	15±1	16	39.811	0.34	1.08	0.0086	1
2462		15.17	15±1	16	39.811	0.34	1.08	0.0086	1
2412	802.11g	14.2	13.5±1	14.5	28.184	0.34	1.08	0.0061	1
2437		13.28	13.5±1	14.5	28.184	0.34	1.08	0.0061	1
2462		12.97	13.5±1	14.5	28.184	0.34	1.08	0.0061	1
2412	802.11n H20	12.33	11.5±1	12.5	17.783	0.34	1.08	0.0038	1
2437		11.51	11.5±1	12.5	17.783	0.34	1.08	0.0038	1
2462		11.23	11.5±1	12.5	17.783	0.34	1.08	0.0038	1
2422	802.11n(H T40)	12.46	11.5±1	12.5	17.783	0.34	1.08	0.0038	1
2437		11.72	11.5±1	12.5	17.783	0.34	1.08	0.0038	1
2452		11.63	11.5±1	12.5	17.783	0.34	1.08	0.0038	1

ANT2

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		
2412	802.11b	15.4	14.5±1	15.5	35.481	-0.03	0.99	0.0070	1
2437		14.98	14.5±1	15.5	35.481	-0.03	0.99	0.0070	1
2462		14.5	14.5±1	15.5	35.481	-0.03	0.99	0.0070	1
2412	802.11g	14.61	14±1	15	31.623	-0.03	0.99	0.0062	1
2437		13.89	14±1	15	31.623	-0.03	0.99	0.0062	1
2462		13.45	14±1	15	31.623	-0.03	0.99	0.0062	1
2412	802.11n H20	13.3	12.5±1	13.5	22.387	-0.03	0.99	0.0044	1
2437		12.68	12.5±1	13.5	22.387	-0.03	0.99	0.0044	1
2462		12.24	12.5±1	13.5	22.387	-0.03	0.99	0.0044	1
2422	802.11n(H T40)	13.33	12.5±1	13.5	22.387	-0.03	0.99	0.0044	1
2437		12.88	12.5±1	13.5	22.387	-0.03	0.99	0.0044	1
2452		12.69	12.5±1	13.5	22.387	-0.03	0.99	0.0044	1

MIMO

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
2412	802.11n H20	15.89	15±1	16	39.811	3.17	2.07	0.0164	1
2437		14.88	15±1	16	39.811	3.17	2.07	0.0164	1
2462		14.46	15±1	16	39.811	3.17	2.07	0.0164	1
2422	802.11n(H T40)	15.73	15±1	16	39.811	3.17	2.07	0.0164	1
2437		15.11	15±1	16	39.811	3.17	2.07	0.0164	1
2452		15.01	15±1	16	39.811	3.17	2.07	0.0164	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,5510-5670MHz5755-5795MHz; WIFI 802.11ac80:5210-5210MHz;5290-5290MHz;5530-5610MHz; 5775-5775MHz

Power density limited: 1mW/cm

Antenna Type: FPC antenna

Antenna gain1/2:3.53dBi/-1.46dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain1 Numeric= $10^{(dBi/10)}=10^{(3.53/10)}=2.25$

antenna gain2 Numeric= $10^{(dBi/10)}=10^{(-1.46/10)}=0.71$

5.2G

ANT1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5180	802.11a	11.34	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5200		11.73	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5240		12.34	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5180	802.11n20	11.38	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5200		11.71	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5240		12.4	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5190	802.11n40	11.17	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5230		12.11	11.5±1	12.5	17.783	3.53	2.25	0.0080	1
5210	802.11ac80	11.64	11±1	12	15.849	3.53	2.25	0.0071	1
5180	802.11ac20	11.67	12±1	13	19.953	3.53	2.25	0.0089	1
5200		12	12±1	13	19.953	3.53	2.25	0.0089	1
5240		12.36	12±1	13	19.953	3.53	2.25	0.0089	1
5190	802.11ac40	11.51	11±1	12	15.849	3.53	2.25	0.0071	1
5230		11.99	11±1	12	15.849	3.53	2.25	0.0071	1

ANT2

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5180	802.11a	11.89	11±1	12	15.849	-1.46	0.71	0.0023	1
5200		11.92	11±1	12	15.849	-1.46	0.71	0.0023	1
5240		11.96	11±1	12	15.849	-1.46	0.71	0.0023	1
5180	802.11n20	11.55	11±1	12	15.849	-1.46	0.71	0.0023	1
5200		11.75	11±1	12	15.849	-1.46	0.71	0.0023	1
5240		11.86	11±1	12	15.849	-1.46	0.71	0.0023	1
5190	802.11n40	11.36	11±1	12	15.849	-1.46	0.71	0.0023	1
5230		11.56	11±1	12	15.849	-1.46	0.71	0.0023	1
5210	802.11ac80	11.59	11±1	12	15.849	-1.46	0.71	0.0023	1
5180	802.11ac20	11.58	11±1	12	15.849	-1.46	0.71	0.0023	1
5200		11.75	11±1	12	15.849	-1.46	0.71	0.0023	1
5240		11.83	11±1	12	15.849	-1.46	0.71	0.0023	1
5190	802.11ac40	11.34	11±1	12	15.849	-1.46	0.71	0.0023	1
5230		11.5	11±1	12	15.849	-1.46	0.71	0.0023	1

MIMO

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm ²)	(mW/cm ²)
5180	802.11n20	14.36	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5200		14.28	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5240		14.35	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5190	802.11n40	13.98	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5230		14.24	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5210	802.11ac80	14.18	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5180	802.11ac20	14.12	14±1	15	31.623	4.4	2.75	0.0173	1
5200		14.64	14±1	15	31.623	4.4	2.75	0.0173	1
5240		14.59	14±1	15	31.623	4.4	2.75	0.0173	1
5190	802.11ac40	14.55	14±1	15	31.623	4.4	2.75	0.0173	1
5230		14.04	14±1	15	31.623	4.4	2.75	0.0173	1

5.3G

ANT1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)
5260	802.11a	10.87	10±1	11	12.589	3.53	2.25	0.0056	1
5280		10.86	10±1	11	12.589	3.53	2.25	0.0056	1
5320		10.79	10±1	11	12.589	3.53	2.25	0.0056	1
5260	802.11n20	10.59	10±1	11	12.589	3.53	2.25	0.0056	1
5280		10.59	10±1	11	12.589	3.53	2.25	0.0056	1
5320		10.7	10±1	11	12.589	3.53	2.25	0.0056	1
5270	802.11n40	10.17	9.5±1	10.5	11.220	3.53	2.25	0.0050	1
5310		10.35	9.5±1	10.5	11.220	3.53	2.25	0.0050	1
5260	802.11ac20	10.5	10±1	11	12.589	3.53	2.25	0.0056	1
5280		10.68	10±1	11	12.589	3.53	2.25	0.0056	1
5320		10.67	10±1	11	12.589	3.53	2.25	0.0056	1
5270	802.11ac40	10.18	9.5±1	10.5	11.220	3.53	2.25	0.0050	1
5310		10.43	9.5±1	10.5	11.220	3.53	2.25	0.0050	1
5290	802.11ac80	10.18	9.5±1	10.5	11.220	3.53	2.25	0.0050	1

ANT2

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)
5260	802.11a	11.33	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5280		11.33	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5320		11.29	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5260	802.11n20	11.09	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5280		11.23	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5320		11.18	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5270	802.11n40	10.8	10±1	11	12.589	-1.46	0.71	0.0018	1
5310		10.98	10±1	11	12.589	-1.46	0.71	0.0018	1
5260	802.11ac20	11.1	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5280		11.17	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5320		11.14	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1
5270	802.11ac40	10.75	10±1	11	12.589	-1.46	0.71	0.0018	1
5310		10.91	10±1	11	12.589	-1.46	0.71	0.0018	1
5290	802.11ac80	10.67	10±1	11	12.589	-1.46	0.71	0.0018	1

MIMO

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5260	802.11n20	13.58	13±1	14	25.119	4.4	2.75	0.0138	1
5280		13.59	13±1	14	25.119	4.4	2.75	0.0138	1
5320		13.58	13±1	14	25.119	4.4	2.75	0.0138	1
5270	802.11n40	13.21	12.5±1	13.5	22.387	4.4	2.75	0.0123	1
5310		13.42	12.5±1	13.5	22.387	4.4	2.75	0.0123	1
5260	802.11ac20	13.29	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5280		14.19	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5320		13.75	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5270	802.11ac40	13.75	13±1	14	25.119	4.4	2.75	0.0138	1
5310		13.26	13±1	14	25.119	4.4	2.75	0.0138	1
5290	802.11ac80	13.44	12.5±1	13.5	22.387	4.4	2.75	0.0123	1

5.6G

ANT1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
5500	802.11a	11.9	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5600		13.39	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5700		13.19	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5500	802.11n20	11.78	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5600		13.31	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5700		13.06	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5510	802.11n40	11.62	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5590		12.78	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5670		13.21	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5500	802.11ac20	12.09	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5600		13.29	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5700		12.98	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5510	802.11ac40	11.62	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5590		12.84	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5670		13.47	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5530	802.11ac80	12.02	12.5±1	13.5	22.387	3.53	2.25	0.0100	1
5610		13.11	12.5±1	13.5	22.387	3.53	2.25	0.0100	1

ANT2

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5500	802.11a	11.9	12.5±1	13.5	22.387	-1.46	0.71	0.0032	1
5600		13.32	12.5±1	13.5	22.387	-1.46	0.71	0.0032	1
5700		12.9	12.5±1	13.5	22.387	-1.46	0.71	0.0032	1
5500	802.11n20	11.83	11±1	12	15.849	-1.46	0.71	0.0023	1
5600		10.48	11±1	12	15.849	-1.46	0.71	0.0023	1
5700		10.11	11±1	12	15.849	-1.46	0.71	0.0023	1
5510	802.11n40	9.06	9.5±1	10.5	11.220	-1.46	0.71	0.0016	1
5590		9.21	9.5±1	10.5	11.220	-1.46	0.71	0.0016	1
5670		10.08	9.5±1	10.5	11.220	-1.46	0.71	0.0016	1
5500	802.11ac20	9.04	11±1	12	15.849	-1.46	0.71	0.0023	1
5600		10.45	11±1	12	15.849	-1.46	0.71	0.0023	1
5700		11.69	11±1	12	15.849	-1.46	0.71	0.0023	1
5510	802.11ac40	9.13	9.5±1	10.5	11.220	-1.46	0.71	0.0016	1
5590		9.29	9.5±1	10.5	11.220	-1.46	0.71	0.0016	1
5670		10.2	9.5±1	10.5	11.220	-1.46	0.71	0.0016	1
5530	802.11ac80	8.7	9±1	10	10.000	-1.46	0.71	0.0014	1
5610		9.89	9±1	10	10.000	-1.46	0.71	0.0014	1

MIMO

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5500	802.11n20	14.61	15±1	16	39.811	4.4	2.75	0.0218	1
5600		15.64	15±1	16	39.811	4.4	2.75	0.0218	1
5700		15.28	15±1	16	39.811	4.4	2.75	0.0218	1
5510	802.11n40	14.16	15±1	16	39.811	4.4	2.75	0.0218	1
5590		14.82	15±1	16	39.811	4.4	2.75	0.0218	1
5670		15.55	15±1	16	39.811	4.4	2.75	0.0218	1
5500	802.11ac20	14.07	15±1	10	10.000	4.4	2.75	0.0055	1
5600		15.36	15±1	10	10.000	4.4	2.75	0.0055	1
5700		14.34	15±1	10	10.000	4.4	2.75	0.0055	1
5510	802.11ac40	15.42	15±1	15.5	35.481	4.4	2.75	0.0194	1
5590		15.09	15±1	15.5	35.481	4.4	2.75	0.0194	1
5670		13.92	15±1	15.5	35.481	4.4	2.75	0.0194	1
5530	802.11ac80	15.09	15±1	16	39.811	4.4	2.75	0.0218	1
5610		15.8	15±1	16	39.811	4.4	2.75	0.0218	1

5.8G

ANT1

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5745	802.11a	11.46	11±1	12	15.849	3.53	2.25	0.0071	1
5785		11.68	11±1	12	15.849	3.53	2.25	0.0071	1
5825		11.47	11±1	12	15.849	3.53	2.25	0.0071	1
5745	802.11n20	11.48	11±1	12	15.849	3.53	2.25	0.0071	1
5785		11.54	11±1	12	15.849	3.53	2.25	0.0071	1
5825		11.22	11±1	12	15.849	3.53	2.25	0.0071	1
5755	802.11n40	11.19	10.5±1	11.5	14.125	3.53	2.25	0.0063	1
5795		11.32	10.5±1	11.5	14.125	3.53	2.25	0.0063	1
5745	802.11ac20	11.57	11±1	12	15.849	3.53	2.25	0.0071	1
5785		11.49	11±1	12	15.849	3.53	2.25	0.0071	1
5825		11.34	11±1	12	15.849	3.53	2.25	0.0071	1
5755	802.11ac40	11.22	10.5±1	11.5	14.125	3.53	2.25	0.0063	1
5795		11.28	10.5±1	11.5	14.125	3.53	2.25	0.0063	1
5775	802.11ac80	11.57	11±1	12	15.849	3.53	2.25	0.0071	1

ANT2

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5745	802.11a	12.01	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5785		11.79	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5825		11.71	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5745	802.11n20	11.98	11±1	12	15.849	-1.46	0.71	0.0023	1
5785		11.73	11±1	12	15.849	-1.46	0.71	0.0023	1
5825		11.7	11±1	12	15.849	-1.46	0.71	0.0023	1
5755	802.11n40	11.69	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5795		12.27	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5745	802.11ac20	12.41	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5785		12.04	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5825		11.87	11.5±1	12.5	17.783	-1.46	0.71	0.0025	1
5755	802.11ac40	11.77	11±1	12	15.849	-1.46	0.71	0.0023	1
5795		11.66	11±1	12	15.849	-1.46	0.71	0.0023	1
5775	802.11ac80	11.49	10.5±1	11.5	14.125	-1.46	0.71	0.0020	1

MIMO

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density
		(dBm)		tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric	(mW/cm2)	(mW/cm2)
5745	802.11n20	14.33	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5785		14.06	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5825		13.79	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5755	802.11n40	13.98	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5795		14.21	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5745	802.11ac20	14.05	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5785		14.21	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5825		13.78	13.5±1	14.5	28.184	4.4	2.75	0.0154	1
5755	802.11ac40	13.48	13.5±1	14	25.119	4.4	2.75	0.0138	1
5795		13.61	13.5±1	14	25.119	4.4	2.75	0.0138	1
5775	802.11ac80	14.16	13.5±1	14.5	28.184	4.4	2.75	0.0154	1

GSM/WCDMA/LTE

Antenna Type:FPC antenna

GSM /WCDMA Gain: GSM 850: 3.04dBi; PCS 1900:1.77dBi;

Band II:1.77dBi; Band IV:2.23dBi ; Band V: 3.04dBi

LTE: Band 2: 1.77dBi, Band 4: 2.23 dBi, Band 5:3.04 dBi, Band 7: 2.45 dBi,

Band 12: -0.98 dBi, Band 13: 0.36 dBi, Band25:1.77 dBi, Band 26:3.04 dBi,

modulation	Max		Antenna		Evaluation result	Power density Limits
	tune-up power		Gain		(mW/cm2)	(mW/cm2)
	(dBm)	(mW)	(dBi)	Numeric		
GSM850	33	1995.262	3.04	2.01	0.7993	1
PCS1900	30	1000.000	1.77	1.50	0.2990	1
WCDMA Band 2	24	251.189	1.77	1.50	0.0751	1
WCDMA Band 5	23.5	223.872	3.04	2.01	0.0897	1
WCDMA Band 4	24	251.189	2.23	1.67	0.0835	1
LTE Band 2	25	316.228	1.77	1.50	0.0946	1
LTE Band 4	24	251.189	2.23	1.67	0.0835	1
LTE Band 5	23.5	223.872	3.04	2.01	0.0897	1
LTE Band 7	24	251.189	2.45	1.76	0.0878	1
LTE Band 12	24	251.189	-0.98	0.80	0.0399	1
LTE Band 13	23	199.526	0.36	1.09	0.0431	1
LTE Band 25	24	251.189	1.77	1.50	0.0751	1
LTE Band 26A	23.5	223.872	3.04	2.01	0.0897	1
LTE Band 26B	23.5	223.872	3.04	2.01	0.0897	1

SIMULTANEOUS TRANSMISSIONS

When a number of sources at different frequencies, and/or broadband sources, contribute to the total exposure, it becomes necessary to weigh each contribution relative to the MPE. To comply with the MPE, the fraction of the MPE in terms of E², H² (or power density) incurred within each frequency interval should be determined and the sum of all such fractions should not exceed unity. In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

Worst case is Simultaneous Transmissions for 2.4G Wi-Fi+GSM850

Band	Mode	Tune up (dBm)	Tune up (mW)	Standalone	Standalone	Simultaneous		Verdict
				Evaluation result	Power density Limits	Evaluation result	Limit	
				(mW/cm2)	(mW/cm2)	raio		
2.4G Wi-Fi+GSM850	GSM850	33	1995.26	0.3969	1	0.4049	1	PASS
	2.4G WIFI	16	39.81	0.0079	1			

Signature:

Date: 2025-07-18



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