

FCC ID:2BBDI20003502MTCA05

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: Ceramic Antenna

antenna gain: 2.27 dBi;

R=20cm

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

antenna gain Numeric= $10^{(\text{dBi}/10)}=10^{(2.27/10)}=1.69$

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		
2402	DH5	-4.90	-4±1	-3	0.501	2.27	1.69	0.0002	1
2441		-5.33	-5±1	-4	0.398	2.27	1.69	0.0001	1
2480		-6.18	-6±1	-5	0.316	2.27	1.69	0.0001	1
2402	2DH5	-3.55	-3±1	-2	0.631	2.27	1.69	0.0002	1
2441		-4.13	-4±1	-3	0.501	2.27	1.69	0.0002	1
2480		-4.87	-4±1	-3	0.501	2.27	1.69	0.0002	1
2402	3DH5	-3.14	-3±1	-2	0.631	2.27	1.69	0.0002	1
2441		-3.68	-3±1	-2	0.631	2.27	1.69	0.0002	1
2480		-4.44	-4±1	-3	0.501	2.27	1.69	0.0002	1

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	GFSK(1M)	-4.81	-4±1	-3	0.501	2.27	1.69	0.0002	1
2440		-5.44	-5±1	-4	0.398	2.27	1.69	0.0001	1
2480		-6.11	-6±1	-5	0.316	2.27	1.69	0.0001	1
2402	GFSK(2M)	-4.71	-4±1	-3	0.501	2.27	1.69	0.0002	1
2440		-5.13	-5±1	-4	0.398	2.27	1.69	0.0001	1
2480		-6.05	-6±1	-5	0.316	2.27	1.69	0.0001	1

2.4G WIFI:

Operation Frequency: WIFI 802.11b/g/n20/ax20: 2412-2462MHz,
802.11n40/ax40: 2422-2452MHz,
Power density limited: 1mW/ cm²

Antenna Type: Ceramic Antenna

antenna gain: 2.27 dBi;

R=20cm

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

antenna gain Numeric=10^{^(dBi/10)}= 10^{^(2.27/10)}=3.16

Antenna	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		
Ant 1	2412	802.11b	15.12	15±1	16	39.811	2.27	1.69	0.0134	1
Ant 1	2437		15.36	15±1	16	39.811	2.27	1.69	0.0134	1
Ant 1	2462		15.75	15±1	16	39.811	2.27	1.69	0.0134	1
Ant 2	2412	802.11b	15.72	15±1	16	39.811	2.27	1.69	0.0134	1
Ant 2	2437		15.06	15±1	16	39.811	2.27	1.69	0.0134	1
Ant 2	2462		15.27	15±1	16	39.811	2.27	1.69	0.0134	1
Ant 1	2412	802.11g	18.26	19±1	20	100.000	2.27	1.69	0.0336	1
Ant 1	2437		19.29	20±1	21	125.893	2.27	1.69	0.0422	1
Ant 1	2456		20.22	20±1	21	125.893	2.27	1.69	0.0422	1
Ant 2	2412	802.11g	19.35	19±1	20	100.000	2.27	1.69	0.0336	1
Ant 2	2437		18.96	19±1	20	100.000	2.27	1.69	0.0336	1
Ant 2	2456		19.3	19±1	20	100.000	2.27	1.69	0.0336	1
Ant 1	2412	802.11n H20	17.45	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2437		18.22	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2462		18.95	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2412	802.11n H20	17.72	17±1	18	63.096	2.27	1.69	0.0212	1
Ant 2	2437		17.83	17±1	18	63.096	2.27	1.69	0.0212	1
Ant 2	2462		17.67	17±1	18	63.096	2.27	1.69	0.0212	1
Ant 1	2422	802.11n H40	17.89	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2437		18.23	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2452		18.47	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2422	802.11n H40	17.55	17±1	18	63.096	2.27	1.69	0.0212	1
Ant 2	2437		17.73	17±1	18	63.096	2.27	1.69	0.0212	1
Ant 2	2452		17.57	17±1	18	63.096	2.27	1.69	0.0212	1
Ant 1	2412	802.11ax20	17.61	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2437		18.68	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2462		19.43	19±1	20	100.000	2.27	1.69	0.0336	1
Ant 2	2412	802.11ax20	18.49	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2437		18.57	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2462		18.23	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2422	802.11ax40	18.06	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2437		18.54	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 1	2452		18.94	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2422	802.11ax40	18.41	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2437		18.31	18±1	19	79.433	2.27	1.69	0.0267	1
Ant 2	2452		17.94	18±1	19	79.433	2.27	1.69	0.0267	1

5G WIFI:

Operation Frequency: WIFI 802.11a/n/ac(HT20): 5180-5240MHz;5260-5320MHz,5500-5700MHz,5745-5825MHz;

WIFI 802.11n/ac/ax(HT40): 5190-5230MHz;5270-5310MHz,5510-5670MHz;5755-5795MHz;

WIFI 802.11ac/ax(HT80):5210-5210MHz;5290-5290MHz;5530-5610MHz;5775-5775MHz

Power density limited: 1mW/cm

Antenna Type: Ceramic Antenna

antenna gain:5.18dBi;

R=20cm

5.2G

Antenna	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		
Ant 1	5180	802.11a	12.81	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 1	5200		12.78	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 1	5240		12.15	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 2	5180	802.11a	12.62	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 2	5200		12.7	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 2	5240		12.83	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 1	5180	802.11n H20	11.4	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5200		11.36	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5240		11.16	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5180	802.11n H20	11.47	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5200		11.54	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5240		11.7	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5190	802.11n H40	11.22	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5230		10.67	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5190	802.11n H40	10.95	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5230		10.09	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5180	802.11ac20	10.94	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5200		10.93	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5240		10.85	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5180	802.11ac20	10.57	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5200		10.68	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5240		10.78	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5190	802.11ac40	10.35	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5230		10.87	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5190	802.11ac40	10.47	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5230		10.55	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5210	802.11ac80	10.4	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5210	802.11ac80	10.31	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5180	802.11ax20	10.1	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5200		10.05	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5240		9.47	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 2	5180	802.11ax20	9.73	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 2	5200		9.82	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 2	5240		9.94	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 1	5190	802.11ax40	9.11	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 1	5230		8.68	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5190	802.11ax40	8.84	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5230		9.07	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 1	5210	802.11ax80	8.94	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5210	802.11ax80	8.91	8±1	9.00	7.943	5.18	3.30	0.0052	1

5.3G

Antenna	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)
Ant 1	5260	802.11a	12.84	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 1	5280		12.51	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 1	5320		12.48	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 2	5260	802.11a	12.91	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 2	5280		12.95	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 2	5320		12.85	12±1	13.00	19.953	5.18	3.30	0.0131	1
Ant 1	5260	802.11n H20	11.02	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5280		11.22	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5320		11.75	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5260	802.11n H20	11.81	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5280		11.51	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5320		11.84	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5270	802.11n H40	11.2	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5310		11.41	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5270	802.11n H40	11.34	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5310		11.4	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5260	802.11ac20	11.16	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5280		10.77	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5320		10.85	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5260	802.11ac20	10.85	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5280		10.96	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 2	5320		11.01	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant 1	5270	802.11ac40	10.4	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5310		10.57	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5270	802.11ac40	10.26	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5310		10.34	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5290	802.11ac80	10.37	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5290	802.11ac80	10.18	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5260	802.11ax20	9.28	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5280		9.86	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5320		9.97	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5260	802.11ax20	10.04	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5280		9.64	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5320		10.01	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5270	802.11ax40	9.25	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 1	5310		9.45	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 2	5270	802.11ax40	9.15	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 2	5310		9.24	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 1	5290	802.11ax80	8.88	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant 2	5290	802.11ax80	9.11	9±1	10.00	10.000	5.18	3.30	0.0066	1

5.6G

Antenna	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		
Ant1	5500	802.11a	12.33	13±1	14.00	25.119	5.18	3.30	0.0165	1
Ant1	5580		12.89	13±1	14.00	25.119	5.18	3.30	0.0165	1
Ant1	5700		13.08	13±1	14.00	25.119	5.18	3.30	0.0165	1
Ant2	5500	802.11a	12.86	13±1	14.00	25.119	5.18	3.30	0.0165	1
Ant2	5580		12.57	13±1	14.00	25.119	5.18	3.30	0.0165	1
Ant2	5700		12.84	13±1	14.00	25.119	5.18	3.30	0.0165	1
Ant1	5500	802.11n20	11.35	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5580		11.41	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5700		11.25	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5500	802.11n20	11.82	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5580		11.55	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5700		11.83	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5510	802.11n40	11.04	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5590		10.97	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5670		10.96	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5510	802.11n40	11.24	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5590		10.71	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5670		10.92	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5500	802.11ac20	11.07	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5580		10.52	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5700		11.06	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5500	802.11ac20	10.86	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5580		10.57	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant2	5700		10.93	11±1	12.00	15.849	5.18	3.30	0.0104	1
Ant1	5510	802.11ac40	10.64	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant1	5590		10.1	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant1	5670		10.07	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant2	5510	802.11ac40	10.14	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant2	5590		9.74	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant2	5670		10.04	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant1	5530	802.11ac80	10.55	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant1	5610		10.23	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant2	5530	802.11ac80	10.62	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant2	5610		10.15	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant1	5500	802.11ax20	9.29	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5580		9.73	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5700		9.71	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5500	802.11ax20	9.86	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5580		9.72	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5700		9.98	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5510	802.11ax40	9.49	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5590		8.94	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5670		8.87	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5510	802.11ax40	9.05	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5590		9.12	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5670		8.87	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5530	802.11ax80	8.53	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant1	5610		9.1	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5530	802.11ax80	8.65	9±1	10.00	10.000	5.18	3.30	0.0066	1
Ant2	5610		8.61	9±1	10.00	10.000	5.18	3.30	0.0066	1

5.8G

Antenna	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)
Ant 1	5745	802.11a	10.89	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5785		10.11	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5825		10.62	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5745	802.11a	10.46	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5785		10.83	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 2	5825		10.38	10±1	11.00	12.589	5.18	3.30	0.0083	1
Ant 1	5745	802.11n H20	8.67	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5785		8.82	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5825		8.48	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5745	802.11n H20	8.32	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5785		8.87	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5825		8.45	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5755	802.11n H40	8.45	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5795		8.12	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5755	802.11n H40	7.93	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5795		8.48	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5745	802.11ac20	7.75	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5785		7.94	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5825		7.71	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5745	802.11ac20	7.75	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5785		7.81	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5825		7.86	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5755	802.11ac40	8.05	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5795		7.7	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5755	802.11ac40	7.96	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5795		7.49	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5775	802.11ac80	7.47	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5775	802.11ac80	7.95	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5745	802.11ax20	7.95	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5785		7.29	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5825		7.38	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5745	802.11ax20	7.35	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5785		7.94	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5825		7.46	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 1	5755	802.11ax40	8.04	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5795		8.07	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5755	802.11ax40	7.83	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 2	5795		7.37	8±1	9.00	7.943	5.18	3.30	0.0052	1
Ant 1	5775	802.11ax80	7.57	7±1	8.00	6.310	5.18	3.30	0.0041	1
Ant 2	5775	802.11ax80	7.98	7±1	8.00	6.310	5.18	3.30	0.0041	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 E^2 , H^2 (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

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

Max. SIMULTANEOUS TRANSMISSIONS MODE

Band	Antenna	SISO					MIMO		Verdict
		tune-up power	Antenna	Separation distance (cm)	Evaluation result	Power density	Evaluation result	Power density Limits	
		(dBm)	Gain		(mW/cm2)	(mW/cm2)			
			(dBi)						
BT	Ant1	-2	2.27	20	0.000212	1	0.081199	1	PASS
Wi-Fi 2.4G ax20	Ant1	20	2.27	20	0.033552	1			
	Ant2	19	2.27	20	0.026651	1			
Wi-Fi 5G n20	Ant1	12	5.18	20	0.010392	1			
	Ant2	12	5.18	20	0.010392	1			

Conclusion:

For the max result : $0.081199 \leq 1 \text{mW/cm}^2$ for Power density, compliance with RF exposure.

Signature:

Date: 2023-12-23



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

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