

FCC 47 CFR MPE REPORT

iFIT Health and Fitness, Inc.

Tablet

Model Number: MP22-NEON416

FCC ID: OMC447847

Applicant:	iFIT Health and Fitness, Inc.
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Maximum Permissible Exposure

1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times $ E ^2$, $ H ^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times $ E ^2$, $ H ^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.0	30

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

1.2. MPE Calculation Method

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

E = Electric Field (V/m)

P = Peak 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

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak 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. Conducted Power Result

Mode	Frequency (MHz)	Antenna	Peak output power (dBm)	Peak output power (mW)
GFSK	2402	ant 1	9.65	9.226
	2441	ant 1	9.56	9.036
	2480	ant 1	9.67	9.268
$\pi/4$ -DQPSK	2402	ant 1	9.66	9.247
	2441	ant 1	9.38	8.670
	2480	ant 1	9.45	8.810
8-DPSK	2402	ant 1	9.91	9.795
	2441	ant 1	9.63	9.183
	2480	ant 1	9.67	9.268
BLE 1M	2402	ant 1	4.84	3.0479
	2440	ant 1	4.82	3.0339
	2480	ant 1	4.59	2.8774
IEEE 802.11b	2412	ant 1	16.7	46.774
		ant 2	16.3	42.658
	2437	ant 1	16.69	46.666
		ant 2	16.37	43.351
	2462	ant 1	16.55	45.186
		ant 2	15.8	38.019
IEEE 802.11g	2412	ant 1	17.4	54.954
		ant 2	17.11	51.404
	2437	ant 1	17.19	52.360
		ant 2	16.99	50.003
	2462	ant 1	17.07	50.933
		ant 2	16.7	46.774
IEEE 802.11n HT20	2412	ant 1	15.32	34.041
		ant 2	15.33	34.119
	2437	ant 1	15.13	32.584
		ant 2	15.23	33.343
	2462	ant 1	14.82	30.339
		ant 2	14.85	30.549

IEEE 802.11n HT40	2422	ant 1	15.26	33.574
		ant 2	15.35	34.277
	2437	ant 1	15.35	34.277
		ant 2	15.18	32.961
	2452	ant 1	15.16	32.810
		ant 2	14.92	31.046
IEEE 802.11a	5180	ant 1	15.64	36.644
		ant 2	15.45	35.075
	5200	ant 1	15.44	34.995
		ant 2	15.43	34.914
	5240	ant 1	14.86	30.620
		ant 2	15.06	32.063
	5260	ant 1	15.17	32.885
		ant 2	14.77	29.992
	5300	ant 1	15.55	35.892
		ant 2	13.75	23.714
	5320	ant 1	15.38	34.514
		ant 2	14.81	30.269
	5500	ant 1	15.13	32.584
		ant 2	14.05	25.410
	5580	ant 1	14.94	31.189
		ant 2	14.84	30.479
	5700	ant 1	15.32	34.041
		ant 2	15.06	32.063
	5745	ant 1	15.09	32.285
		ant 2	14.83	30.409
	5785	ant 1	14.54	28.445
		ant 2	14.54	28.445
	5825	ant 1	15.2	33.113
		ant 2	13.94	24.774
IEEE 802.11n20	5180	ant 1	13.29	21.330
		ant 2	12.33	17.100
	5200	ant 1	13.14	20.606
		ant 2	12.14	16.368
	5240	ant 1	13.53	22.542
		ant 2	12.83	19.187

	5260	ant 1	13.74	23.659
		ant 2	12.59	18.155
	5300	ant 1	13.17	20.749
		ant 2	12.29	16.943
	5320	ant 1	14.1	25.704
		ant 2	11.73	14.894
	5500	ant 1	14.68	29.376
		ant 2	12.11	16.255
	5580	ant 1	14.45	27.861
		ant 2	13.01	19.999
	5700	ant 1	14.84	30.479
		ant 2	13.27	21.232
	5745	ant 1	14.68	29.376
		ant 2	12.86	19.320
	5785	ant 1	14.12	25.823
		ant 2	12.59	18.155
	5825	ant 1	13.96	24.889
		ant 2	12.05	16.032
IEEE 802.11ac VHT20	5180	ant 1	13.31	21.429
		ant 2	12.53	17.906
	5200	ant 1	13.29	21.330
		ant 2	12.39	17.338
	5240	ant 1	13.65	23.174
		ant 2	11.98	15.776
	5260	ant 1	14.03	25.293
		ant 2	11.74	14.928
	5300	ant 1	14.48	28.054
		ant 2	11.56	14.322
	5320	ant 1	14.35	27.227
		ant 2	11.87	15.382
	5500	ant 1	14.9	30.903
		ant 2	12.08	16.144
	5580	ant 1	14.58	28.708
		ant 2	13.09	20.370
	5700	ant 1	14.05	25.410
		ant 2	12.33	17.100
	5745	ant 1	13.87	24.378

		ant 2	12.01	15.885
		ant 1	13.39	21.827
	5785	ant 2	11.85	15.311
	5825	ant 1	13.04	20.137
		ant 2	11.19	13.152
IEEE 802.11n HT40	5190	ant 1	13.41	21.928
		ant 2	12.35	17.179
	5230	ant 1	13.65	23.174
		ant 2	12.27	16.866
	5270	ant 1	14.12	25.823
		ant 2	11.68	14.723
	5310	ant 1	14.39	27.479
		ant 2	11.58	14.388
	5510	ant 1	14.85	30.549
		ant 2	12.22	16.672
	5590	ant 1	14.66	29.242
		ant 2	12.97	19.815
	5670	ant 1	14.19	26.242
		ant 2	12.7	18.621
	5755	ant 1	13.94	24.774
		ant 2	12.1	16.218
	5795	ant 1	13.51	22.439
		ant 2	11.78	15.066
IEEE 802.11ac VHT40	5190	ant 1	13.67	23.281
		ant 2	12.38	17.298
	5230	ant 1	13.97	24.946
		ant 2	12.51	17.824
	5270	ant 1	14.18	26.182
		ant 2	11.6	14.454
	5310	ant 1	14.36	27.290
		ant 2	11.54	14.256
	5510	ant 1	14.89	30.832
		ant 2	12.11	16.255
	5590	ant 1	14.75	29.854
		ant 2	12.83	19.187
	5670	ant 1	14.03	25.293
		ant 2	12.53	17.906

	5755	ant 1	13.98	25.003
		ant 2	12.03	15.959
	5795	ant 1	14.49	28.119
		ant 2	12.32	17.061
IEEE 802.11ac VHT80	5210	ant 1	13.53	22.542
		ant 2	13.13	20.559
	5290	ant 1	14.13	25.882
		ant 2	12.54	17.947
	5530	ant 1	14.43	27.733
		ant 2	12.6	18.197
	5610	ant 1	13.92	24.660
		ant 2	12.62	18.281
	5775	ant 1	13.94	24.774
		ant 2	12.79	19.011

3. Calculated Result and Limit

SISO

The Worst Mode	Antenna	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
					(dBi)	(Linear)			
2.4G Band									
GFSK	ant 1	9.67	9 ±1	10	3.23	2.104	0.0042	1	Complies
$\pi/4$ -DQPSK	ant 1	9.66	9 ±1	10	3.23	2.104	0.0042	1	Complies
8-DPSK	ant 1	9.91	9 ±1	10	3.23	2.104	0.0042	1	Complies
BLE	ant 1	4.84	4 ±1	5	3.23	2.104	0.0013	1	Complies
IEEE 802.11b	ant 1	16.7	16 ±1	17	3.28	2.128	0.0212	1	Complies
	ant 2	16.37	16 ±1	17	3.34	2.158	0.0215	1	Complies
IEEE 802.11g	ant 1	17.4	17 ±1	18	3.28	2.128	0.0267	1	Complies
	ant 2	17.11	17 ±1	18	3.34	2.158	0.0271	1	Complies
IEEE 802.11n HT20	ant 1	15.32	15 ±1	16	3.28	2.128	0.0169	1	Complies
	ant 2	15.33	15 ±1	16	3.34	2.158	0.0171	1	Complies
IEEE 802.11n HT40	ant 1	15.35	15 ±1	16	3.28	2.128	0.0169	1	Complies
	ant 2	15.35	15 ±1	16	3.34	2.158	0.0171	1	Complies

5G Band									
IEEE 802.11a	ant 1	15.64	15 $\pm$ 1	16	3.08	2.0324	0.0161	1	Complies
	ant 2	15.45	15 $\pm$ 1	16	2.8	1.9055	0.0151	1	Complies
IEEE 802.11n HT20	ant 1	14.84	14 $\pm$ 1	15	3.08	2.0324	0.0128	1	Complies
	ant 2	13.27	13 $\pm$ 1	14	2.8	1.9055	0.0095	1	Complies
IEEE 802.11ac VHT20	ant 1	14.9	14 $\pm$ 1	15	3.08	2.0324	0.0128	1	Complies
	ant 2	13.09	13 $\pm$ 1	14	2.8	1.9055	0.0095	1	Complies
IEEE 802.11n HT40	ant 1	14.85	14 $\pm$ 1	15	3.08	2.0324	0.0128	1	Complies
	ant 2	12.97	12 $\pm$ 1	13	2.8	1.9055	0.0076	1	Complies
IEEE 802.11ac VHT40	ant 1	14.89	14 $\pm$ 1	15	3.08	2.0324	0.0128	1	Complies
	ant 2	12.83	12 $\pm$ 1	13	2.8	1.9055	0.0076	1	Complies
IEEE 802.11ac VHT80	ant 1	14.43	14 $\pm$ 1	15	3.08	2.0324	0.0128	1	Complies
	ant 2	13.13	13 $\pm$ 1	14	2.8	1.9055	0.0095	1	Complies

MIMIO

Mode	Power Density (S) (mW /cm ²) Antenna 0	Power Density (S) (mW /cm ²) Antenna 1	Power Density (S) (mW /cm ²) Total	Limited of Power Density (S) (mW /cm ²)	Test Result
2.4G Band					
IEEE 802.11n HT20	0.0169	0.0171	0.0340	1	Complies
IEEE 802.11n HT40	0.0169	0.0171	0.0340	1	Complies
5G Band					
IEEE 802.11n HT20	0.0128	0.0095	0.0223	1	Complies
IEEE 802.11ac VHT20	0.0128	0.0095	0.0223	1	Complies
IEEE 802.11n HT40	0.0128	0.0076	0.0204	1	Complies
IEEE 802.11ac VHT40	0.0128	0.0076	0.0204	1	Complies
IEEE 802.11ac VHT80	0.0128	0.0095	0.0223	1	Complies

MAX Power Density (S) (mW/cm ²) Bluetooth	MAX Power Density (S) (mW/cm ²) WiFi	Total Ratio	Limit Ratio	Test Result
0.0042	0.0339	0.0381	1	Complies

Note: 2.4 and 5GHz bands are share an antenna, Can't both the 2.4 and 5 GHz bands operate simultaneously.

End of Test Report