FCC §15.247 (I), §2.1091 – RF EXPOSURE

FCC ID: 2ANH2-P8

Applied procedures / limit

According to FCC §15.247(i) and §1.1307(b)(1), 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 of the Commission's guidelines..

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 Time $\|E\|^2$,$\|H\|^2$ 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
1500-100,000			5	6

Note: f is frequency in MHz

* = Power density limit is applicable at frequencies greater than 100 MHz

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 Time $\|E\|^2$,$\|H\|^2$ 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
1500-100,000			1.0	30

Note: f = frequency in MHz

* = Plane-wave equivalent power density

MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

TEST RESULTS

BT

Mode	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
GFSK	Lowest	0.480	30.00	Pass
	Middle	2.085		
	Highest	3.813		
π/4-DQPSK	Lowest	0.516	20.97	Pass
	Middle	2.097		
	Highest	3.840		
8QPSK	Lowest	0.482	20.97	Pass
	Middle	2.123		
	Highest	3.895		

BLE

Test channel	Peak Output Power (dBm)	Limit(dBm)	Result
Lowest	-2.585	30.00	Pass
Middle	-1.082		
Highest	0.631		

2.4G WIFI

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	15.34	14.66	13.84	12.84	30.00	Pass
Middle	15.12	14.51	13.71	12.74		
Highest	15.04	14.33	13.52	12.67		

5G WIFI

Test Mode	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
802.11a	5180	14.73	23.98	PASS
	5200	14.62	23.98	PASS
	5240	14.51	23.98	PASS
802.11n(HT20)	5180	13.47	23.98	PASS
	5200	13.51	23.98	PASS
	5240	13.16	23.98	PASS
802.11ac(HT20)	5180	12.84	23.98	PASS
	5200	12.71	23.98	PASS
	5240	12.39	23.98	PASS
802.11n(HT40)	5190	12.05	23.98	PASS
	5230	12.16	23.98	PASS
802.11ac(HT40)	5190	11.85	23.98	PASS
	5230	11.79	23.98	PASS
802.11ac(HT80)	5210	10.88	23.98	PASS

Mode	Frequency MHz	Peak Output Power (dBm)	Output power (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm^2)	Limit of Power Density (S) (mW/ cm^2)	Result
BT	2480	3.895	2.452	0(1.00)	0.0005	1	Pass
BLE	2480	0.631	1.156	0(1.00)	0.0002	1	Pass
2.4G WIFI	2412	15.34	34.198	0(1.00)	0.0068	1	Pass
5G WIFI	5180	14.73	29.717	0(1.00)	0.0059	1	Pass

NOTE: R =20cm

2.4 G WiFi and **5 GHz** WiFi can't simultaneously transmission, maximum Power Density (S) is 0.0068(mW/ cm2) does not exceed Limit of Power Density (S) 1 (mW/ cm2).

the device can not transmit with WIFI and BT simultaneously，so MPE is not evaluated in this configuration.

Conclusion: No SAR is required.