



## FCC §15.247 (i), §2.1091 – RF Exposure

# FCC ID: 2BN5S-2503J

### 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> 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, R=0.2m

## TEST RESULTS

	Tune up Produce power	Maximum peak output power (dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/ cm <sup>2</sup> )	Limit (mW/ cm <sup>2</sup> )	Result
WIFI 2.4G	13±1	14	25.12	4.59 (6.62dBi)	0.022945	1	Pass
WIFI 5.1G	13±1	14	25.12	5.0 (6.98dBi)	0.024994	1	Pass
WIFI 5.3G	13±1	14	25.12	5.0 (6.98dBi)	0.024994	1	Pass
WIFI 5.6G	13±1	14	25.12	5.0 (6.98dBi)	0.024994	1	Pass
WIFI 5.8G	13±1	14	25.12	5.0 (6.98dBi)	0.024994	1	Pass

The report only evaluated the antenna values of the maximum antenna gain.

Simultaneous transmitting evaluation:

WIFI and Bluetooth

Mode	Power Density (S) (mW/ cm <sup>2</sup> )	Simultaneous transmitting (mW/ cm <sup>2</sup> )	Limit (mW/ cm <sup>2</sup> )
2.4G WIFI	0.022945	0.047939	1
5G WIFI	0.024994		

Simultaneous transmitting=0.022945/1+0.024994/1=0.047939



For the max result : 0.047939  $\leq$  1.0, compliance with FCC's RF Exposure