

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

**FCC ID:** 2AUVX-NT53E

### 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=20cm

## Test Result of RF Exposure Evaluation

	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
BLE GFSK& LCH	3±1	4	2.5119	1.3677 (1.36dBi)	0.0007	1	Pass
2.4G WIFI 802.11n(HT40)&2455	12±1	13	19.9526	1.3677 (1.36dBi)	0.005	1	Pass
LTE BAND 2	20±1	21	125.892 5	2.2336 (3.49dBi)	0.056	1	Pass
LTE BAND 4	19±1	20	100	2.4155 (3.83dBi)	0.048	1	Pass
LTE BAND 12	18±1	19	79.4328	0.4046 (-3.93dBi)	0.0064	0.5	Pass
LTE BAND 13	19±1	20	100	0.6871 (-1.63dBi)	0.0137	0.5	Pass

supported simultaneous transmission:

BLE+LTE:  $\Sigma$  MPE Ratio =0.0007+0.056=0.0567 $\leq$ 1,

WIFI+ LTE:  $\Sigma$  MPE Ratio =0.005+ 0.056=0.061 $\leq$ 1,So passed.