

## 8. RADIO FREQUENCY EXPOSURE

### 8.1. Limit

According to §1.1310 and §2.1091 RF exposure is calculated.

**Table: Limits for General Population/Uncontrolled Exposure**

<b>Frequency Range (MHz)</b>	<b>Power Density (S) (mW/cm<sup>2</sup>)</b>
0.3–1.34	*(100)
1.34–30	*(180/f <sup>2</sup> )
30–300	0.2
300–1500	f/1500
1500–100,000	1.0

F = frequency in MHz

\* = Plane-wave equivalent power density

### Maximum Permissible Exposure

The MPE was calculated at 20cm to show compliance with the power density limit.

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

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.

Note:

1. Manufacturer declared that the maximum antenna gain is 2.5dBi(Max.).
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

**WIFI**

Test Mode	Channel	Frequency (MHz)	ANT Power (dBm)	ANT Power Tune Up (dBm)
802.11b	Low	2412	13.23	$13.0 \pm 1.0$
	Middle	2437	13.18	$13.0 \pm 1.0$
	High	2462	13.24	$13.0 \pm 1.0$
802.11g	Low	2412	12.09	$12.0 \pm 1.0$
	Middle	2437	12.41	$12.0 \pm 1.0$
	High	2462	12.21	$12.0 \pm 1.0$
802.11n HT20	Low	2412	11.23	$11.0 \pm 1.0$
	Middle	2437	11.37	$11.0 \pm 1.0$
	High	2462	11.45	$11.0 \pm 1.0$

**8.2 Test Results****WIFI**

Test Mode	Channel	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
802.11b	Low	25.12	0.0089	1.0
	Middle	25.12	0.0089	1.0
	High	25.12	0.0089	1.0
802.11g	Low	19.95	0.0071	1.0
	Middle	19.95	0.0071	1.0
	High	19.95	0.0071	1.0
802.11n HT20	Low	15.85	0.0056	1.0
	Middle	15.85	0.0056	1.0
	High	15.85	0.0056	1.0

Antenna Gain (typical): 2.5 dBi, 1.78(numeric)

Prediction distance:  $\geq 20$ cm

The power density level worst case at 20 cm is below the uncontrolled exposure limit.