

## 7. RADIO FREQUENCY EXPOSURE

### 7.1. Limit

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

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

Frequency Range (MHz)	Power Density (S) (mW/cm <sup>2</sup> )
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 0.5dBi(Max.).
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

**Conducted Power Results**

Mode	Channel	Frequency (MHz)	Conducted Output Power (dBm, Peak)	Tolerance $\pm$ (dB)
802.11b	1	2412	10.73	$10.0 \pm 1.0$
	6	2437	10.40	$10.0 \pm 1.0$
	11	2462	10.93	$10.0 \pm 1.0$
802.11g	1	2412	10.90	$10.0 \pm 1.0$
	6	2437	11.25	$11.0 \pm 1.0$
	11	2462	11.59	$11.0 \pm 1.0$
802.11n HT20	1	2412	10.46	$10.0 \pm 1.0$
	6	2437	10.95	$10.0 \pm 1.0$
	11	2462	11.11	$11.0 \pm 1.0$

Test Mode	Channel	Max. Tune Up Power (dBm)	Max. Tune Up Power (mW)	MPE (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
802.11b	Low	11.0	12.59	0.0014	1.0
	Middle	11.0	12.59	0.0014	1.0
	High	11.0	12.59	0.0014	1.0
802.11g	Low	11.0	12.59	0.0014	1.0
	Middle	12.0	15.85	0.0018	1.0
	High	12.0	15.85	0.0018	1.0
802.11n HT20	Low	11.0	12.59	0.0014	1.0
	Middle	11.0	12.59	0.0014	1.0
	High	12.0	15.85	0.0018	1.0

Antenna Gain (typical): -2.41dBi, 0.57 (numeric)

Prediction distance:  $\geq 20$ cm

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