

## 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**

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 0dBi(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	18.72	18.0 $\pm$ 1.0
	6	2437	18.47	18.0 $\pm$ 1.0
	11	2462	18.11	18.0 $\pm$ 1.0
802.11g	1	2412	14.61	14.0 $\pm$ 1.0
	6	2437	14.44	14.0 $\pm$ 1.0
	11	2462	14.05	14.0 $\pm$ 1.0
802.11n HT20	1	2412	19.83	19.0 $\pm$ 1.0
	6	2437	19.43	19.0 $\pm$ 1.0
	11	2462	19.32	19.0 $\pm$ 1.0
802.11n HT40	3	2422	15.28	15.0 $\pm$ 1.0
	6	2437	15.22	15.0 $\pm$ 1.0
	9	2452	15.04	15.0 $\pm$ 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	19.0	79.43	0.0250	1.0
	Middle	19.0	79.43	0.0250	1.0
	High	19.0	79.43	0.0250	1.0
802.11g	Low	15.0	31.62	0.0099	1.0
	Middle	15.0	31.62	0.0099	1.0
	High	15.0	31.62	0.0099	1.0
802.11n HT20	Low	20.0	100.00	0.0314	1.0
	Middle	20.0	100.00	0.0314	1.0
	High	20.0	100.00	0.0314	1.0
802.11n HT40	Low	16.0	39.81	0.0125	1.0
	Middle	16.0	39.81	0.0125	1.0
	High	16.0	39.81	0.0125	1.0

Antenna Gain (typical): 2.0dBi, 1.58(numeric)

Prediction distance:  $\geq$ 20cm

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

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