

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 ²)
0.3–1.34	*(100)
1.34–30	*(180/f ²)
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 2.0dBi(Max.).
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

Test Mode	Channel	Frequency (MHz)	ANT_1 Power (dBm)	ANT_1 Power Tune Up (dBm)	ANT_2 Power (dBm)	ANT_2 Power Tune Up (dBm)
802.11b	Low	2412	15.15	15.0±1.0	15.45	15.0±1.0
	Middle	2437	14.82	15.0±1.0	15.12	15.0±1.0
	High	2462	14.23	15.0±1.0	14.76	15.0±1.0
802.11g	Low	2412	14.74	14.0±1.0	13.38	14.0±1.0
	Middle	2437	14.80	14.0±1.0	13.38	14.0±1.0
	High	2462	14.47	14.0±1.0	13.26	14.0±1.0
802.11n HT20	Low	2412	15.13	15.0±1.0	14.68	15.0±1.0
	Middle	2437	15.02	15.0±1.0	14.49	15.0±1.0
	High	2462	14.74	15.0±1.0	14.33	15.0±1.0
802.11n HT40	Low	2422	16.02	16.0±1.0	16.02	16.0±1.0
	Middle	2437	15.79	16.0±1.0	15.87	16.0±1.0
	High	2452	15.61	16.0±1.0	15.70	16.0±1.0

7.2 Test Results

Test Mode	Channel	ANT_1 Max. Tune Up Power (mW)	ANT_1 MPE (mW/cm ²)	ANT_2 Max. Tune Up Power (mW)	ANT_2 MPE (mW/cm ²)	ANT_1+ANT_2 MPE (mW/cm ²)	Limit (mW/cm ²)
802.11b	Low	39.81	0.0126	39.81	0.0126	N/A	1.0
	Middle	39.81	0.0126	39.81	0.0126	N/A	1.0
	High	39.81	0.0126	39.81	0.0126	N/A	1.0
802.11g	Low	31.62	0.0100	31.62	0.0100	N/A	1.0
	Middle	31.62	0.0100	31.62	0.0100	N/A	1.0
	High	31.62	0.0100	31.62	0.0100	N/A	1.0
802.11n HT20	Low	39.81	0.0126	39.81	0.0126	0.0252	1.0
	Middle	39.81	0.0126	39.81	0.0126	0.0252	1.0
	High	39.81	0.0126	39.81	0.0126	0.0252	1.0
802.11n HT40	Low	50.12	0.0158	50.12	0.0158	0.0316	1.0
	Middle	50.12	0.0158	50.12	0.0158	0.0316	1.0
	High	50.12	0.0158	50.12	0.0158	0.0316	1.0

Antenna Gain (typical): 2.0dBi, 1.585(numeric)

Prediction distance: >=20cm

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