

RADIO FREQUENCY EXPOSURE

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.) for GSM, 3.5dBi (Max.) for WCDMA (So the G for calculate the MPE is 1.58 for GSM, 2.24 for WCDMA).
2. Manufacturer declared that the nearest distance between human and the EUT is 20cm.
3. Only record worst case data.

2 Test Results

Standalone MPE

Test	Channel	Frequency (MHz)	ANT Power (dBm)	ANT Max. Tune Up Power (dBm)	ANT Max. Tune Up Power (mW)	ANT MPE (mW/cm ²)	Limit (mW/cm ²)
GSM 850	128	824.20	31.66	31.0±1.0	1584.8932	0.4982	0.5495
	190	836.60	31.36	31.0±1.0	1584.8932	0.4982	0.5577
	251	848.80	31.59	31.0±1.0	1584.8932	0.4982	0.5659
PCS 1900	512	1850.20	30.65	30.0±1.0	1258.9254	0.3957	1.0000
	661	1880.00	30.48	30.0±1.0	1258.9254	0.3957	1.0000
	810	1909.80	30.26	30.0±1.0	1258.9254	0.3957	1.0000
WCDMA Band V	4132	826.40	27.48	27.0±1.0	630.9573	0.2812	0.5509
	4183	836.60	27.48	27.0±1.0	630.9573	0.2812	0.5577
	4233	846.60	27.35	27.0±1.0	630.9573	0.2812	0.5644
WCDMA Band II	9262	1852.40	27.32	27.0±1.0	630.9573	0.2812	1.0000
	9400	1880.00	27.57	27.0±1.0	630.9573	0.2812	1.0000
	9538	1807.60	27.78	27.0±1.0	630.9573	0.2812	1.0000

Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.