RF Exposure Statement

1. LIMITS

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

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f^2)	30
30 - 300.....	27.5	0.073	0.2	30
300 - 1500.....	.....	.....	f/1500	30
1500 - 100.000.....	.....	.....	1.0	30

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

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

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

2-1. CDMA (CDMA800) BAND

Max Peak output Power at antenna input terminal (dBm)	24.00
Max Peak output Power at antenna input terminal (mW)	251.189
Prediction distance (cm)	20.000
Prediction frequency (MHz)	823.100
Antenna Gain(typical) (dBi)	-3.80
Antenna Gain(numeric)	0.417
Power density at prediction frequency (mW/cm²)	0.02083
MPE limit for uncontrolled exposure at prediction frequency (mW/cm²)	0.549

2-2. CDMA BAND

Max Peak output Power at antenna input terminal (dBm)	24.00
Max Peak output Power at antenna input terminal (mW)	251.189
Prediction distance (cm)	20.000
Prediction frequency (MHz)	824.70
Antenna Gain(typical) (dBi)	-3.100
Antenna Gain(numeric)	0.490
Power density at prediction frequency (mW/cm²)	0.02448
MPE limit for uncontrolled exposure at prediction frequency (mW/cm²)	0.550

2-3. PCS CDMA BAND

Max Peak output Power at antenna input terminal (dBm)	24.00
Max Peak output Power at antenna input terminal (mW)	251.18864
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1880.00
Antenna Gain(typical) (dBi)	0.80
Antenna Gain(numeric)	1.20226
Power density at prediction frequency (mW/cm²)	0.060080
MPE limit for uncontrolled exposure at prediction frequency (mW/cm²)	1.00000

2-4. LTE BAND

Max Peak output Power at antenna input terminal (dBm)	22.85
Max Peak output Power at antenna input terminal (mW)	192.75249
Prediction distance (cm)	20.000
Prediction frequency (MHz)	1882.5
Antenna Gain(typical) (dBi)	0.500
Antenna Gain(numeric)	1.12202
Power density at prediction frequency (mW/cm²)	0.043026
MPE limit for uncontrolled exposure at prediction frequency (mW/cm²)	1.00000

2-5. WLAN BAND

Max Peak output Power at antenna input terminal (dBm)	21.48
Max Peak output Power at antenna input terminal (mW)	140.60475
Prediction distance (cm)	20.000
Prediction frequency (MHz)	2462.0
Antenna Gain(typical) (dBi)	-0.42
Antenna Gain(numeric)	0.90782
Power density at prediction frequency (mW/cm²)	0.025394
MPE limit for uncontrolled exposure at prediction frequency (mW/cm²)	1.00000

2-6. The combined MPE ratio.

CDMA800 BAND measured 0.02083 mW/cm2, Limit (example) is 0.549 mW/cm2, therefore the % of the limit is 0.02083/0.549 = 3.79% or ratio of 0.037942
WLAN measured 0.025394 mW/cm2, Limit (example) is 1.0mW/cm2, therefore the % of the limit is 0.025394/1.0 = 2.5% or ratio of 0.025
The combined MPE ratios is 3.79% + 2.5% = 6.29 % <100% (or 0.037942 + 0.025394 = 0.063336 which is < 1.0)

CDMA BAND measured 0.02448 mW/cm2, Limit (example) is 0.550 mW/cm2, therefore the % of the limit is 0.02448/0.550 = 4.45% or ratio of 0.044509
WLAN measured 0.025394 mW/cm2, Limit (example) is 1.0mW/cm2, therefore the % of the limit is 0.025394/1.0 = 2.5% or ratio of 0.025
The combined MPE ratios is 4.45% + 2.5% = 6.95% <100% (or 0.02448+ 0.025394 = 0.049874 which is < 1.0)

PCS BAND measured 0.060080 mW/cm2, Limit (example) is 1.0 mW/cm2, therefore the % of the limit is 0.060080/1.0 = 6.00% or ratio of 0.06008
WLAN measured 0.025394 mW/cm2, Limit (example) is 1.0mW/cm2, therefore the % of the limit is 0.025394/1.0 = 2.5% or ratio of 0.025
The combined MPE ratios is 6.00% + 2.5% = 8.50% <100% (or 0.06008+ 0.025394 = 0.085474 which is < 1.0)

LTE BAND measured 0.043026 mW/cm2, Limit (example) is 1.0 mW/cm2, therefore the % of the limit is 0.043026/1.0 = 4.30% or ratio of 0.0430
WLAN measured 0.025394 mW/cm2, Limit (example) is 1.0mW/cm2, therefore the % of the limit is 0.025394/1.0 = 2.5% or ratio of 0.025
The combined MPE ratios is 4.30% + 2.5% = 6.8% <100% (or 0.043026+ 0.025394 = 0.06842 which is < 1.0)

3. RESULTS

The power density level at 20 cm is 0.02083 mW/cm², which is below the controlled exposure limit of 0.549 mW/cm² at CDMA(CDMA 800) band.
The combined MPE ratios is 3.79% + 2.5% = 5.35 % <100% (or 0.037942 + 0.025394 = 0.063336 which is < 1.0)

The power density level at 20 cm is 0.02448mW/cm², which is below the controlled exposure limit of 0.550 mW/cm² at CDMA band.
The combined MPE ratios is 4.45% + 2.5% = 6.95% <100% (or 0.02448+ 0.025394 = 0.049874 which is < 1.0)

The power density level at 20 cm is 0.060080 mW/cm², which is below the controlled exposure limit of 1.0 mW/cm² at PCS CDMA band.
The combined MPE ratios is 6.00% + 2.5% = 8.50% <100% (or 0.06008+ 0.025394 = 0.085474 which is < 1.0)

The power density level at 20 cm is 0.043026 mW/cm², which is below the controlled exposure limit of 1.0 mW/cm² at LTE(QPSK) band.
The combined MPE ratios is 4.30% + 2.5% = 8.58% <100% (or 0.043026+ 0.025394 = 0.06842 which is < 1.0)

The power density level at 20 cm is 0.025394 mW/cm², which is below the controlled exposure limit of 1.0 mW/cm² at WLAN band.