

## 11. 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 <sup>2</sup> )	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f <sup>2</sup> )	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. iDen Downlink

Max Peak output Power at antenna input terminal	24.980	dBm
Max Peak output Power at antenna input terminal	314.775	mW
Prediction distance	30.000	cm
Prediction frequency	864.613	MHz
Antenna Gain(typical)	12.000	dBi
Antenna Gain(numeric)	15.849	–
Power density at prediction frequency( S)	0.441	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	0.576	mW/cm <sup>2</sup>

2-2. PCS Downlink

Max Peak output Power at antenna input terminal	23.98000	dBm
Max Peak output Power at antenna input terminal	250.03454	mW
Prediction distance	30.00000	cm
Prediction frequency	1993.75000	MHz
Antenna Gain(typical)	12.00000	dBi
Antenna Gain(numeric)	15.84893	–
Power density at prediction frequency (S)	0.35039	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	1.00000	mW/cm <sup>2</sup>

### 2-3. iDen Uplink

Max Peak output Power at antenna input terminal	25.080	dBm
Max Peak output Power at antenna input terminal	322.107	mW
Prediction distance	30.000	cm
Prediction frequency	819.613	MHz
Antenna Gain(typical)	12.000	dBi
Antenna Gain(numeric)	15.849	–
Power density at prediction frequency( S)	0.451	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	0.546	mW/cm <sup>2</sup>

### 2-4. PCS Uplink

Max Peak output Power at antenna input terminal	23.95000	dBm
Max Peak output Power at antenna input terminal	248.31331	mW
Prediction distance	30.00000	cm
Prediction frequency	1851.25000	MHz
Antenna Gain(typical)	12.00000	dBi
Antenna Gain(numeric)	15.84893	–
Power density at prediction frequency (S)	0.34797	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	1.00000	mW/cm <sup>2</sup>

## 3. RESULTS

The power density level at 30 cm is 0.451 mW/cm<sup>2</sup>(iDen UpLink), 0.441 mW/cm<sup>2</sup>(iDen DownLink), 0.34797 mW/cm<sup>2</sup>(PCS UpLink), 0.35039 mW/cm<sup>2</sup>(PCS DownLink), which is below the uncontrolled exposure limit for Cellular & PCS band.

**Warning:** In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, it must also have a minimum distance of 30 cm from the body during normal operation.